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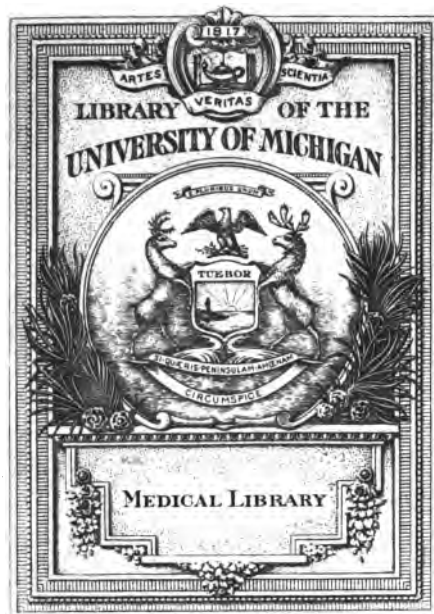
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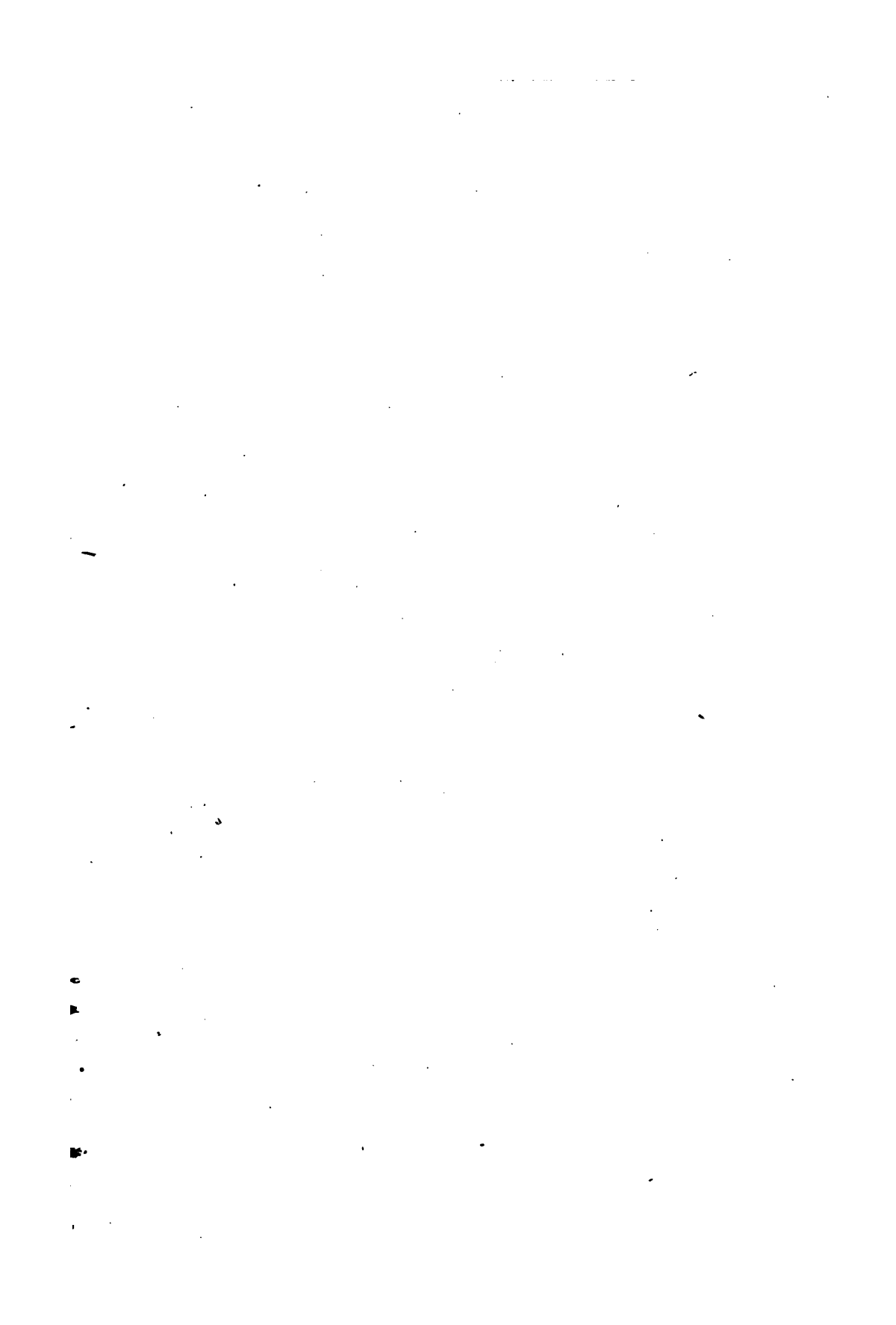


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THE
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[No. 1.

ON
INFLAMMATION
AS A PROCESS OF
ABNORMAL NUTRITION.

BY

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PREFACE.

THE following Treatise contains the results of numerous researches on the subject of Inflammation, which have been carried on by the author during the last four years. His first communication was made to the Medico Chirurgical Society of Edinburgh, in November, 1842, and an abstract of it appeared in Cormack's Journal the following month. In the summer of 1843, the views now published were laid before the leading members of the profession in Edinburgh, at the evening meetings of the Royal College of Physicians. The facts from which they are derived also, were then demonstrated under a series of achromatic microscopes. Since then the valuable Reports of Henle and Wharton Jones have been published, which, although they contain many of the facts noticed by the writer, in no way allude to others. Among these may be mentioned the identity in structure between the capillaries and non-voluntary muscular fibre; the structure of lymph in its various forms; the distinction between the plastic and exudation corpuscles; the identity of the latter with the

granular bodies of the colostrum; and the means of distinguishing inflammatory and non-inflammatory softening.

The author has attempted to establish an increased exudation of blood-plasma, as the essential phenomenon of inflammation. He thinks that this view of the subject will introduce much more precision into our notions of its pathology, and be found of considerable value in practice. He has further endeavoured to point out, how all known facts harmonize with this opinion, and how all the phenomena produced are explicable by the cell-doctrine of nutrition now established in science.

If, in performing his task, the author has been enabled to simplify the study of inflammation and its results, or to throw any light upon the obscurity which has hitherto enveloped it, he will be fully compensated.

J. H. BENNETT.

EDINBURGH, September, 1844.

ON INFLAMMATION.

INTRODUCTION.

It is daily becoming more and more apparent that the results of *post-mortem* examination have ceased to furnish us with facts sufficiently novel and important to advance the study of pathology. The labours of Broussais, Cruveilhier, Lallemand, Andral, and other leaders of the French school, have been keenly disputed, and the truth thus elicited has been embodied among the great mass of medical knowledge. In the same manner

ner the researches of Bright, Abercrombie, Carswell, Hope, and others in this country, have been well studied, generally understood and confirmed, and the pathologist anxiously looks for some new mode of pushing forwards his inquiries. In this juncture the same means by which healthy anatomy and physiology have been advanced, are now employed by the morbid anatomist and pathologist, and organic chemistry and the achromatic microscope furnish him with a key, by the aid of which a new field is thrown open to his investigations.

Researches thus conducted have led to results as unexpected as they are important. In physiology a theory of organization has been shown to apply to all animated nature, — the vegetable as well as animal kingdoms. It has been demonstrated that the humblest and minutest tribes of plants possess the same original structure, as is to be found in the most gigantic trees of the forest, and in animals the same law applies to the production of microscopic infusoria, as to the development of the largest mammiferous tribes. It is now generally admitted that the functions of nutrition and growth are perfected by means of the formation and development of nucleated cells, and the numerous facts which have tended to elucidate this truth, constitute the basis of the doctrine of cytogenesis.

This theory has been applied with great success to an explanation of the mode in which the normal textures are formed, as well as to the manner in which healthy nutrition and secretion take place. But I do not think that its value, as illustrative of diseased processes, has yet been sufficiently dwelt upon, or that it has been shown, to be as universally applicable to the explanation of morbid as of healthy phenomena. If, however, it admit of demonstration that the organic diseases to which animals and vegetables are subject, that the formation of new growths, and the reparation of tissues, are explicable by the same theory, as

applies to the development of healthy structure, it must be allowed that a great step will have been made in pathology. Such a consummation, indeed, might enable us to approximate, if not actually reach some primitive or fundamental law which can alone communicate exactitude to medical science.

That the morbid process generally denominated inflammation is in some way or other connected with a perversion or alteration in nutrition, is an idea which has occurred to many pathologists. The general anatomists of Germany even have done much towards determining the mode in which this is accomplished. Still there are many points which have received little attention, and notwithstanding the vast importance of this fundamental subject in pathology, and the labours of many eminent men, we are still in uncertainty respecting its intimate nature, and the manner in which its products are generated and developed. An attentive study of the numerous works published on this subject, a careful inquiry into the results of modern researches made by means of organic chemistry and the microscope, as well as investigations carried on by myself in connection with it during a period of three years, have induced me to believe that our views of inflammation would be rendered more simple and precise if it could be demonstrated that that process was only a modification of the functions of nutrition, as explained by the doctrine of cytogenesis. I say demonstrated, because although such a view, brought forward as mere hypothesis, might seem probable, it could never serve without positive facts, to extend our knowledge of the subject. Such, then, is the object of the present memoir. Inflammation is so intimately interwoven with the theory and practice of medicine, it so meets us at the very commencement of our pathological inquiries, as well as in our treatment of disease, that in all ages it has been made the pivot upon which the medical

philosophy of the time has revolved. Thus any doctrine, capable of explaining the various phenomena which usher in, constitute, and follow this morbid process, cannot but furnish those principles on which medicine, both as a science and an art, must ultimately rest.

I shall discuss the subject under the following heads; *1st*, Cellular theory of nutrition; *2d*, the blood; *3d*, The capillaries; *4th*, The early phenomena of inflammation; *5th*, The essential phenomenon of inflammation; *6th*, Terminations of inflammation; *7th*, The circumstances influencing the terminations; and *lastly*, the conclusions from the whole.

1. CELLULAR THEORY OF NUTRITION.

The general formation of tissues from cells in vegetables may be shortly described as follows. There is, first, a granular fluid; secondly, a nucleus is formed, which some have described as being made up of an aggregation of these granules, and others, as a corpuscle of a white or dull red colour, enclosing a granule or nucleolus. Upon this nucleus arises a transparent vesicle, at first somewhat resembling the appearance of a watch-glass rising from the dial of a watch, and then the whole constitutes a nucleated cell. The walls of the cell now enlarge. If several lie together they assume a polyhedral form, from the lateral pressure they receive, as in the pith of some plants; fibres are formed from their becoming elongated and splitting up; tubes from the partitions being absorbed whilst the walls remain; and more solid textures from woody or calcareous depositions taking place on their internal walls. After a time, the nucleus disappears, leaving a non-nucleated cell; but it sometimes remains permanently. It must not be supposed, however, that every granular fluid gives rise to a nucleus; every nucleus to a cell, or that every cell assists in forming other textures. Granules,

nuclei, and cells, often remain permanently, thus constituting the basis of several fluids and textures. Some cells have their organization completed when fully developed, as in the *Protococcus nivalis*, and *Torula ceriviseæ*.

In animals the same process takes place. The ovum is a nucleated cell of which the germinal spot is the nucleolus, the germinal vesicle the nucleus, and the vitelline membrane the cell wall. Dr. Martin Barry has admirably traced the formation of cells within these, from which, as in vegetables, all the animal structures are formed. As in certain tribes of plants some of these nucleated cells are persistent, so in animals others, such as blood corpuscles, pigment cells of the choroid, fat cells, and those in cartilage are permanent; in others, the cells undergo various modifications in shape, until they ultimately become developed into the different animal structures. Late researches also would indicate that the nuclei are not only persistent in some of the fully formed tissues, but undergo alterations in form, being flattened and elongated.

Reproduction from nucleated cells has been shown to take place in two ways, *1st*, by the formation of a fluid between the nucleus and cell wall, in which granules are produced and, subsequently, nuclei and cells, until the original cell wall breaks or disappears, giving exit to the new productions; *2d*, by new cells arising within the old one, through the division of the nucleus into two or more segments, from each of which a new cell is formed.

The species of growth depends upon the supply of nourishment from without. At the earliest period of development, when the cells are loose, we find them swimming in an albuminous fluid, which contains in solution the elements of nutrition. The cell wall appears to possess a certain vital principle of selection, by means of which these are absorbed. This fluid is called a blastema. In the higher plants,

the cells coalesce and undergo transformations, one of the first results of organization is for some of these cells to form a series of canals, by means of which this nutritive fluid is carried to all parts of the organism. In vegetables these vessels, by a species of endosmosis, absorb a nutritive fluid from the soil. This is called sap, and is sent to all parts of the plant. By a species of exosmosis it is again exuded, and constitutes a blastema for the formation and support of nucleated cells. In this way vegetable nutrition is kept up.

Exactly the same process takes place in animals. The ovum, when merely a nucleated cell, is nourished by a vital selective species of endosmosis. In the higher animals, again, one of the first processes is the formation of canals from cells to carry the nutritive fluid to every part of the organism. In oviparous animals a large quantity of material is accumulated within the shell, constituting the yolk and albumen, from which nourishment is derived. In mammiferous animals during utero-gestation this fluid, or cytotblastema, is also obtained by endosmosis from the blood of the parent, and in them, again, by a species of exosmosis, effused for the origin and support of nucleated cells, which rapidly undergo transformations to form the future being.

After birth nutrition is carried on in a similar manner, only that materials are then conveyed into the stomach and intestinal canal, and from these the vessels by an endosmosis, similar to what takes place in plants, absorb a nutritive fluid called chyle, which is ultimately converted into blood.

Thus nutrition in all organized beings consists in the formation of a cytotblastema, in which nucleated cells are formed, which are again ultimately developed into the different textures or made subservient to the function of secretion.*

* M. Mandl has lately attacked the princi-

If this doctrine be correct (and it cannot be denied that it is supported by a strong body of evidence) there is one point which demands the serious consideration of every medical practitioner, viz., that a healthy nutrition must depend upon the condition of the nutritive fluid or blastema. This, then, leads us to inquire what are the constituent elements of which it is formed, and what are the conditions necessary to maintain it in a higher state of integrity.

It has been shown by recent chemical researches, that vegetables and animals are composed of similar proximate principles. These Liebig has divided into nitrogenized and non-nitrogenized. The most important of the nitrogenized elements are fibrin, albumen, and caseine, and these may be still farther reduced into one element, viz., proteine, discovered by Mulder. The more important non-nitrogenized elements are fat, starch, gum, and sugar. These abound in carbon.

Now it has been proved by numerous experiments, that no species of nutrition can proceed unless there be a union of at least one of both classes of elements, and in animals the two which are most readily convertible into nourishment are the albuminous and oily principles. These constitute the basis of every texture. The granules found in every blastema consist of a minute drop of oil, surrounded by a membrane of albumen. Such are the granules of the chyle, the milk, and the yolk of the egg. That they are

ples of this doctrine on what appear to us very insufficient grounds, and attempted to replace it by a theory of depositions and attractions, of anything but a satisfactory nature. A critical examination of his opinions, however, would lead us too far from the object we have in view. (See *Manuel d'Anatomie Générale*, par M. Mandl, 1843.) Facts to which we shall afterwards allude, undoubtedly show that certain membranes, granules, and filaments may be formed by deposition independent of cellular development. This, however, does not appear to us opposed to the doctrine of growth from cells.

not loose drops of oil, as some suppose, is proved by their never uniting so long as the membrane which surrounds them remains perfect. I have subjected milk globules to a great force with Chevalier's compressor, and could never make them unite. To abstract the oil from the membrane the latter must be lacerated mechanically, and hence, why the process of churning is necessary to procure butter from cream.

That the globules of milk are real structures is still farther shown, by their possessing the property of endosmosis and exosmosis, as may be proved on the addition of water and syrup. Now these structures may be produced mechanically.

Dr. Ascherson of Berlin made the important discovery, that when a drop of fluid fat was brought into contact with fluid albumen, the latter immediately coagulated, and a membrane is formed. I have performed this experiment again and again, and frequently demonstrated the membrane thus produced to others. Shortly after its formation, it becomes stronger and stronger, and apparently contracts into folds. If, after the membrane has been thus produced, the same globules of oil are mixed intimately together by trituration, it is of course broken up, and an emulsion formed: But I have observed that an examination with the microscope does not now enable us to detect any shreds of this membrane; we only see globules similar to those contained in the milk, which in like manner are composed of an envelope of albumen enclosing the oil.

It was further shown by Ascherson that the sporules and primary cells in the fungi had a similar composition. The isolated cells of animals, such as those of lymph, blood and purulent matter, are evidently composed of like principles. They are dissolved in æther and alkalis; the cell wall is made transparent by acetic acid, and they all exhibit the phenomenon of endosmosis and exosmosis. Their

composition, then, is essentially the same.

Still the globules in an emulsion or in the milk, though real structures, are not living structures. When and how vitality is stamped upon them is still a mystery, but I believe that they constitute the nucleus of every cell, and that the moment life is imparted to them, a series of both chemical and structural changes takes place. By the first the original element of the nitrogenized principles proteine is converted into fibrin, caseine, or albumen, according to the demands of the organism, and by the second bone, muscle, nerve, and all the various tissues are produced.*

These views are not only important as a matter of theory, they admit of practical application to the treatment of disease. For instance, in scrofulous persons we see nutrition impeded. The nitrogenized elements are in excess; the evacuations even become albuminous and are glairy like white of egg; gradually the albuminous principle of the blood becomes predominant, while the globules are diminished in quantity; at the same time the fatty or carbonized principle disappears, and emaciation takes place; at length albumen is deposited in the textures, constituting tubercular effusions, the destructive effects of which on organs essential to life are ultimately fatal. The whole of this process is evidently one of perverted nutrition; and that this is owing to an absence of the carbonized or oleaginous elements and an excess of the nitrogenized or albuminous, must be evident. The indication of cure, then, under such circum-

* The formation of these globules by the mere union of oil and albumen is cited by Mandl as an objection to the doctrine of cytogenesis, and as favouring his theory of depositions, inasmuch as true cells may be thus formed without either nucleus or nucleolus. The opinion we have advanced above, however, respecting the real character and object of these structures, will perhaps remove any seeming discrepancy which regarded them.

stances, must be to introduce into the system the first named principle, namely, fluid, fat, or oil, in order that it may combine with the excess of albumen, and constitute a healthy blastema for the support of nutrition. The value of this practice is not hypothetical, it has been well established for the last twenty years, long before any theory regarding it was formed, or the doctrine of cytogenesis heard of. In Germany the animal oils are extensively used in all cases of perverted nutrition, from excess of albumen, they have long held and still hold a prominent place in all the pharmacopœias of Germany, Holland, Sweden, and Denmark, and, at the present day, are continually prescribed by the most eminent practitioners, both physicians and surgeons, of those countries. Perhaps there are few articles in the *Materia Medica* the value of which, in the cases indicated, has been supported by such a mass of incontestible evidence.*

Although the doctrine of cytogenesis undoubtedly embraces a vast number of facts, late researches have shown that it is not so universally applicable as Schwann and his followers have supposed. We have already alluded to the formation of a membrane, and of structures by the union of oil and albumen. The former is very analogous to the sarcolemma, and basement membrane of Bowman, and we have seen a similar one form on the surface of healthy blood during the act of coagulation. Filaments also are deposited in the *liquor sanguinis* of buffy blood which may be seen, forming under the microscope, independent of cells, as noticed by Gulliver and Addison. Further, the clot frequently prevents a purely fibrous structure, and, there is every reason to suppose, as we shall afterwards see, that this fibrous and filamentous texture is subservient to union by the first intention,

independent of the formation of nucleated cells. But although the proposition, that every filament is the result of cellular development, requires modification, we have no doubt that all the compound structures, and the essential phenomena of growth, are mainly attributable to the transformation of nucleated cells. Instead, however, of supposing that this alone constitutes the process of formation, facts, in our opinion, indicate that this is combined with the occasional production of membranes, granules, and filaments by means of simple deposition. Perhaps also it may ultimately be seen even more decidedly, that the theory of deposition brought forward by Mandl, should be more or less conjoined with the beautiful doctrine of cytogenesis elaborated by Schleiden and Schwann. If so, future researches must determine the limits which should be ascribed to each, in order that our ideas of formation and growth may be rendered more universally applicable, than by adopting one view to the exclusion of the other.

From all that has preceded it must be evident that the process of nutrition is dependent, on the one hand, upon the blood, and, on the other, upon the structures by means of which its nutritive portions are eliminated. These, therefore, it will be necessary to take into consideration.

II. THE BLOOD.

The study of the blood naturally divides itself into that of the solid and that of the fluid portions. The former consists of the different corpuscles which float in the latter, or the blood plasma. We shall consider each of these in succession.

Corpuscles in the Blood. — Three kinds of bodies are found floating in the blood plasma or *liquor sanguinis*. 1st, The yellow (commonly called red) corpuscle. 2d, The colourless corpuscle; and 3dly, minute granules.

The form and character of the yel-

* See the writer's *Treatise on the Ol. Jecoris Aselli*.

low corpuscle, as seen under the microscope, is so well known that I need not dwell upon it. Its structure and composition, however, is still a matter of dispute. Most diversified opinions have been held on this subject, all of which, it appears to me, may be reduced to the following. The yellow blood corpuscle has been regarded, 1, as an animalcule (Kircher, Borelli); 2, as a globule of oil, Malpighi); 3, as composed of six particles, each of which are formed of six lymphatic globules (Leuwenhoeck); 4, as a ring enclosing an opening in the centre, (De la Torre); 5, as a vesicle containing a nucleus which moves in it like a pea in a bladder (Hewson); 6, as a solid fibrinous body of a biconcave form (Young, Hodgkin, Lister, Gulliver); 7, as a homogeneous body in the living vessel which partly coagulates when dead to form a solid centre (Blainville, Mandl); 8, as a vesicle containing a nucleus surrounded by air (Schulz); 9, as a vesicle simply containing semi-fluid colouring matter (Donné); 10, as an organized nucleated cell (Schwann), with six nuclei (Barry); 11, as a vesicle containing a nucleus attached to it by its poles, surrounded by a coloured fluid (Rees, Lane); 12, and lastly, as a body containing a spinal filament, the elementary texture of all tissues (Barry).

On taking into consideration the structure of the yellow corpuscle, we must consider its physical properties, for it is evident that no view of its formation can be correct if it do not harmonize with the known facts regarding it. Thus, the yellow blood corpuscle is, 1st, highly elastic. It may be seen when examining structures running between solid or agglomerated masses, elongating itself, and after having passed the obstruction rapidly regaining its original circular form. 2d. It exhibits the phenomenon of endosmosis and exosmosis. Water causes it to swell, to lose the form of a disk, and to become colour-

less and globular. Syrup, on the other hand, causes it to contract and shrivel up. 3d. The addition of weak acetic acid dissolves, or renders very transparent, its outer wall, whilst its central portion becomes isolated and prominent. These facts must be acknowledged by every histologist who has carefully examined these corpuscles, and it must be evident that they are totally opposed to the opinions of Kircher, Borelli, Malpighi, Leewenhoeck, De la Torre, Young, Hodgkin, Lister, and Gulliver. On the other hand, they are more or less in harmony with the views of Hewson, Blainville, Mandl, Schulz, Donné, Schwann, Rees, Lane, and Barry.

A criticism of the different opinions these observers have brought forward would carry us too far; suffice it to say that a careful examination of them, in conjunction with numerous observations of my own, have convinced me that the view of Schwann combines in itself all the facts with which we are acquainted regarding the corpuscle, viz., that it is a nucleated cell, subject to the same vital laws of growth and decay as those of similar isolated and organized structures. All the observations which have been made with respect to its development agree with this view of the subject. Moreover, I have occasionally, like Donné, seen the outer wall break, the fluid escape, and the shrivelled-up membrane remain. Like Barry, I have seen these corpuscles undergo rapid changes in form, sometimes appearing as if the nucleus were attached to the side, at others, the edges serrated, and at others, the whole structure oval, square, or crescentic.* Like him also, and Quekett, I have occasionally seen the cell enclose granules, which are given off on the rupture of its wall, and sometimes I have seen in the nucleus of the corpuscle, an enclosed granule or nu-

* Indeed these bodies may be said to undergo endless varieties of shape, under different circumstances.

cleolus. All these facts support the view of its cellular origin and nature, and we may consider this structure as composed, in the majority of instances, of a nucleus, a cell wall, and a fluid interposed between them.

The steps by which these bodies are formed in the adult, and their ultimate destination, have not yet been accurately traced. It is very probable, however, that they will be found to obey the same laws as govern the development of organized cells in general. The granules of the chyle entering the torrent of the circulation probably constitute the nuclei of these bodies, which assimilating from the *liquor sanguinis* as a blastema, the elements of nutrition undergo further changes to constitute the perfect nucleated cell. After a time it is likely that they are again dissolved in the blood-plasma. In this way the yellow corpuscle and *liquor sanguinis* may be said to be mutually convertible into each other.

With respect to the functions of these bodies, I consider that the theory of Liebig perfectly agrees with most of the pathological facts with which we are acquainted, and even with what we know of the formation of these bodies. He shows that they are the only structures in the blood which contain iron, and to this circumstance we must attribute their colour. Whether, however, the oxidized compound of iron be dissolved in the fluid existing between the nucleus and cell wall, or exist in a more solid form lining the latter, has not yet been demonstrated. Most probably the first opinion is the correct one, as asserted by Rees and Lane. At all events, we may, with Liebig, regard the yellow corpuscles of the blood as the carriers of oxygen, which they absorb in the lungs and give off in the capillaries. Hence two processes of oxidation are continually going on: by the one, the constant temperature of the lungs, and by the other the heat of the rest of the body is maintained.

facts and observations from

which this theory is deduced, I must refer to the work of Liebig itself.

The colourless corpuscle has received a much less share of attention than the one just noticed. In the Mammalia they were first seen by M. Mandl. Their number in man differs in different individuals. I have sometimes seen them very numerous, whilst at others scarcely one can be discovered. I have frequently found also that whilst aortic blood is free from these bodies, that of the *vena cava* in the same subject contains great quantities of them. Whether they are similar to the lymph corpuscles in the blood of reptiles, described by Spallanzani and Müller, it is difficult to determine. They are not of the same size; and it is worthy of remark, that in reptiles the yellow corpuscle is the larger, and the white one is the smaller. In man it is the reverse. In reptiles we can see them moving in the living vessel. This of course has never been observed in man, nor, so far as I am aware, in the Mammalia, although the bat's wing offers a favourable means for observation. There is one difficulty, however, with respect to their existence in the blood of mammals, viz., that from their size they could not pass through a great part of the capillary system. Are we then to believe with Mandl, that they are fibrinous globules, that is, the fibrin coagulated on the object glass? Such a conclusion appears to me opposed by the fact, that they possess cell walls, contain granules, and exhibit a distinct nucleus on the addition of acetic acid. They are, therefore, organized cells. On a superficial examination they resemble pus globules, and have no doubt been often mistaken for these corpuscles.

Besides the structures just alluded to, minute granules are found in the blood, resembling those of chyle, and such as are found within all organized cells. Whether they are the same granules seen in the chyle which have undergone no further change, or whether they are the granules found

in the white and occasionally in the yellow blood corpuscle, is still undetermined. No doubt, however, that many of these granules exist in the blood, varying in number and size in different circumstances even in the same individual. In this, then, as in every other blastema for the support of nucleated cells, we see granules and corpuscles in different stages of formation.

It has been thought by Donné, and others (Barry), that these three kinds of bodies are only different stages of one growth. That one or more of the granules unite to constitute a nucleus; but whether the yellow or the white corpuscle is the next or the ultimate stage of growth is not determined. There can be little doubt that the existence of these different corpuscles in one fluid are connected with some such explanation, and it further seems probable from an analogy to the development of cells in general, that the white corpuscle is the last stage of the process. It has already been stated that granules are occasionally seen within the yellow corpuscle, and we have only to suppose these increased, the whole structure enlarged, and an absence of colour to constitute the white one. That they are so few in number when compared to the yellow corpuscles is dependent possibly on a large number of the latter being dissolved. We may, however, readily conceive that some escape and undergo further development.

Let us now consider the fluid part of the blood, the *liquor sanguinis* or *blood plasma*.—This fluid, when seen in the vessels of a living animal, appears perfectly transparent. Under certain circumstances it is known to possess the property of coagulation, that is to say, the fibrinous portion becomes separated from the albuminous in a solid form. This process of coagulation is different according as it takes place, removed from the body, or in contact with the living tissues.

It is now well known that the cor-

puscles of the blood take no active part in the formation of the clot. They are merely entangled in the meshes of the fibrin, and impart their colour to it. They may, however, be separated from it mechanically by washing or by stirring the blood with rods while in the act of coagulation. In some states of the blood the corpuscles sink to the bottom of the vessel, and a buffy coat is formed. This is favoured by every circumstance which retards the coagulation. Hence why a large opening in the vein and a deep vessel induce, whilst a small interrupted stream, a shallow vessel, and a cool atmosphere retard the formation of the buffy coat.

It has long been supposed that this phenomenon is especially connected with an inflammatory state. Pirry even calls it hematitis or inflammation of the blood. That the buffy coat is common in acute inflammations cannot be questioned, and it would appear to result from the greater specific gravity of the corpuscles, as compared with that of the *liquor sanguinis* in such cases. This was first pointed out by Jurin, and confirmed by J. Hunter and J. Davy. It would also seem from the experiments of Mandl, that, notwithstanding the greater quantity of fibrin found in inflammatory blood, that its specific gravity is somewhat lower than in health, and the observations of Nasse, Thackrah, Scudamore, Babington, and others support the same conclusion.* Further, it is well known that a buffy coat often appears in the third cup of blood taken, although not in the first or second. This has more especially been observed in rheumatism. Here the blood has been too dense and tenacious to allow the easy deposition of the yellow corpuscles; but no sooner has it been rendered

* Nasse and Wharton Jones attribute the buffy coat to an increased attraction existing between the yellow corpuscles. The latter supposes that they form a net or spider web, the contraction of which squeezes out colourless *liquor sanguinis*.

somewhat thinner by venesection than the globules subside more quickly, and a colourless layer of fibrin is formed on the surface.

It has been shown by Andral and Gavarret that in inflammations an excess of fibrin exists in the blood, and that the proportion is not only increased relatively to the globules and its other constituents, but as regards the amount of this fluid in the body. A buffy coat, however, may also exist on the clot of anemic patients, especially of chlorotics. In such cases the yellow globules are diminished in quantity, whilst the amount of fibrin remains normal. Here, then, a similar disproportion between the fibrin and globules takes place, causing a like result, although the pathological state is very different. A buffy coat, therefore, although frequent in inflammations, cannot be considered as peculiar to them.

On examining a portion of the clot under the microscope, it will be found to be made up of minute filaments interlacing each other and mixed with the corpuscles of the blood, as was first pointed out by Mr. Gulliver. The mode in which these filaments are deposited is well described by Mr. Addison. The process is best seen in blood removed from a man labouring under acute pleuritis. I have frequently had opportunities of confirming the observations of Mr. Addison, and of seeing these filaments form under the microscope. The process is somewhat analogous to crystallization, except that no regular forms are produced, and the filaments float loose in the serum, or are more or less interlaced with each other.

Mr. Gulliver states that nucleated corpuscles exist in the colourless clot, and supposes that in coagulating such corpuscles are formed. Now coagulation is the last vital act of the blood, and it would certainly be surprising if new growths were to spring up when life is about to become extinct. The formation of filaments is simply an

act of deposition, and is completed in a few moments. A nucleated cell, on the other hand, is the result of growth, must pass through regular stages, and can scarcely be conceived to be formed so rapidly. I have in vain looked for corpuscles that might be attributed to such a source. But I have frequently seen the yellow corpuscles deprived of their colouring matter intimately mixed with the filaments, the which, it appears to me, must have been mistaken for nucleated cells proper to the clot.* I have frequently endeavoured, by maceration and washing, to separate the blood-globules from portions of clot; but although I have readily made the latter colourless, yet I never could succeed in entirely removing all the corpuscles.†

Coagulation sometimes takes place within the vessels during life, causing more or less obstruction, or it is the result of the formation of aneurismal pouches. In either case portions of the clot are often found colourless from the readiness with which the yellow corpuscles are precipitated. On the other hand, coagulated *liquor sanguinis*, when exuded into the living textures, presents appearances and undergoes changes, which will be more particularly alluded to in a subsequent part of this memoir.

As regards the functions of the *liquor sanguinis* it is entirely subservient to nutrition. During life, portions of it are continually exuding through the capillary vessels, and undergoing changes by means of which the texture and secretions are constantly forming. It holds in solution all the principles essential to the constitution of these, which are elaborated in different organs through the

*The colourless corpuscles found in the clot, which Andral describes as *globules blancs*, after the addition of sulphate of soda, are, in my opinion, changed yellow corpuscles, and not the granular bodies destitute of colour found in healthy blood.

† Of course the corpuscles found in exuded lymph, from inflammation, are not to be confounded with those here alluded to.

medium of the minute blood-vessels. Whilst, on the one hand, it is continually receiving, from the result of digestion, new matter, so, on the other, it is always dispensing this in an altered form to every part of the organism to meet the wants of the economy.

We find, then, that the blood consists of a solid and of a fluid portion, and may be regarded as continually carrying on two great systems of operations. The solid particles are subservient to the production of animal heat, whilst the fluid portion is subservient to the function of nutrition. These two operations are intimately connected with one another. Without a certain temperature, as we shall afterwards see, the growth of organized beings cannot proceed, and without the existence of nutritive elements, capable of undergoing chemical transformation, animal heat cannot be maintained.

In the performance of these important operations the blood itself is dependent on a system of vessels distributed through the organism. Whilst the first furnishes the essential material, the latter is the apparatus through whose agency the effects are produced. Thus we are led to a consideration of the capillaries.

III. THE CAPILLARIES.

To the naked eye blood-vessels appear to be formed of three coats. 1st, the internal or serous; 2d, the middle or fibrous; and 3d, the external or cellular. A more minute examination has enabled the histologist following Henle to demonstrate the existence of six layers, each of which may readily be distinguished by its intimate texture. They may be enumerated as follows, proceeding from within outwards. 1. The internal layer which presents all the characters of pavement epithelium. 2. The second layer is a transparent, delicate, and fragile membrane, which easily rolls upon itself. It is distinguished by long,

occasionally branched filaments, running transversely, with round or oval openings of various sizes perforating the layer. It is occasionally absent. 3. The third layer is characterized by longitudinal lines which are in no way changed by acetic acid. It is formed of one and sometimes of several membranes. 4. The fourth layer is characterized by short transverse fibres, which alternate with each other. It is much developed in large vessels, and constitutes the principal portion of what is called the middle coat. 5. The fifth layer is only found in the large arteries, and is, in point of fact, true elastic tissue. 6. The sixth layer is composed of cellular tissue, the fibres of which are arranged longitudinally, having scattered here and there persistent nuclei.

The satisfactory demonstration of these different layers requires great care. Some are better seen in the arteries than in the veins, or in vessels of a particular size. For all the necessary information on this subject I must refer to Henle. The smallest twig of a vessel in the mesentery of a rabbit, rendered transparent by weak acetic acid, and examined under a power of 500 linear diameters, will immediately convince any one of the accuracy of his description.

As the vessels approach the periphery the coats become fewer and fewer in number. The cellular, longitudinal, and transverse layers remain in very minute vessels. At length the two first also disappear, and in the true capillary or intermediate vessel we have nothing but the remains of the transverse. It is composed of a simple transparent; yet very firm membrane, without the smallest opening, studded at irregular intervals with nuclei of various shapes. These are sometimes round, at others oval, and occasionally approaching a square form. I have found it very easy to demonstrate these vessels on subjecting a portion of *pia mater* to the microscope. In the rabbit and mouse

their characters are very distinct and beautifully defined.

In the numerous demonstrations I have made of these structures, I was struck with the resemblance which the capillary vessel presented to the fibres of non-voluntary muscles. These, it is well known, are described by histologists to be composed of bands, with nuclei scattered at irregular intervals in their substance. I subsequently discovered that, if the mucous coat be carefully removed from a portion of the intestine (say in the rabbit), and the remaining structure rendered transparent by acetic acid, a longitudinal and transverse coat, with longitudinal and transverse lines, formed by elongated nuclei, are apparent as in the coats of arteries. In short, the two structures in some demonstrations were so similar, that I should have had some difficulty in recognizing one from the other, were the microscopic examinations above attended to. Repeated examination of this fact, as well as numerous observations on the organic muscular fibre, have led me to the conclusion, that no structural difference exists between what is called the muscular coat in the intestines, and that constituting the third and fourth layers in arteries, as previously described. Neither does any essential difference exist between these last and the ultimate texture of the capillaries. If this opinion be correct, then it will be natural to suppose that their function is also similar.

The question of the muscular structure of arteries has been long a subject of dispute. Lately, however, physiologists have, for the most part, concluded that the arteries are not muscular, although they all acknowledge that the capillaries possess undoubted contractility. Now, if this property depend on the so-called muscular coat in the intestinal walls, why should not the contractility in the capillaries be connected with a structure which we have demonstrated to be similar. We are certainly inclined to hold this opinion, the which is rendered more pro-

bable from the fact, that the contractility is more evident and powerful where the structure is most free from all others. In the larger arteries and veins, the layer of epithelium, the fibrous and cellular coats more or less retard its action, and we have no evidence of powerful contraction in those vessels. In the capillaries, on the other hand, where this structure constitutes the whole of the vascular wall, the contraction is very powerful, as is demonstrated by a crowd of physiological and pathological facts.

The term muscular fibres, as applied to this structure, gives rise to very erroneous notions. Persons naturally conceive that some relation exists between voluntary and non-voluntary muscle, whereas no two elements can be more distinct. The fibres seen running longitudinally and transversely, as in the intestinal coats; the fibres of the bladder, stomach, &c., have no analogy whatever with the striated fasciculi of voluntary muscle. Their mode of contraction, also, is perfectly unknown. The fact, however, viz., that the structure hitherto called non-voluntary muscle is the same in the contractile coat of the muscles and intestines, the middle coat of the arteries and in the capillaries, leaves very little doubt in my mind, that the vital contractility possessed by all these tissues is the same, and dependent on the same causes.

The mode in which the capillaries are arranged merit great attention. The term capillary derived from the Latin *capillus*, a hair, was formerly only intended to convey the meaning of a fine vessel. It is now found to be very vague. Most of the vessels constituting the peripheral vascular system are much smaller than the human hair, some even not above one-sixth, or one-tenth of its size. The smallest are those which will only permit one blood globule to pass through it in single file. These vessels are formed of the simple structure formerly described. Others are much larger,

and allow two or more globules to pass abreast, and are composed of two layers. Berres and Hyrtl have distinguished these two kinds of vessels from each other, calling the latter capillaries, and the former intermediate vessels. According to them we have arterial capillaries and venous capillaries, and an intermediate system connecting the two. This distinction, which is supported by the structure, and probably the function, is certainly deserving attention.

A description of the various networks which the capillary and intermediate vessels form, would be foreign to the object of this memoir. I must content myself with referring to the works of Berres, Hyrtl, and Krause. Suffice it to say, that, although the distinctions made by the first anatomist are perhaps unnecessarily numerous, still most characteristic differences really exist, indeed so much so as to enable one readily to detect the tissue of organ, simply from an inspection of its vascular arrangement. Further, I think it can scarcely be denied that the arrangement of the minute vessels is intimately connected with the peculiar structure and functions of the organs which they supply. The crossed twig in the cellular tissue; the straight capillaries with their intermediate vessels at right angles, in muscle; their peculiar arrangement in the cortical substance of the kidney, in the liver, &c., all lead to the supposition that the disposition of these vessels is intimately connected with the distinctive results of nutrition and secretion in various localities.

The more specific office of the capillaries and intermediate vessels is evidently; 1st, so to subdivide the blood that it may reach every portion of the organism, and enable its corpuscles to perform their function. 2d, to offer a membrane by means of which exosmosis and endosmosis may be effected. What the connection may be between the vital properties of those vessels and the exudation of blood

plasma it is difficult to determine. We may remark, however, that the delicate homogeneous structure they present, admirably fits them for acting as fine filters subjected to vital laws,—retaining the solid corpuscles and granules, and allowing only the fluid portions to transude. How far the circulation is influenced by the contractility of the capillaries is still a matter of inquiry.

From these considerations the importance of the capillaries, as connected with nutrition, will become apparent. So long as they only permit that amount of blood plasma to exude which is capable of supplying the quantity dissipated by waste, so long they may be considered as performing their functions in a normal manner. But when circumstances induce such a change in them that the amount of exudation is materially diminished or increased, then an *abnormal* state is occasioned. If the amount be diminished, atrophy will be produced, if it be increased, that peculiar pathological change, hitherto denominated inflammation, is constituted. The steps by which this is occasioned we shall now proceed to consider.

(To be Continued.)

FORMATION OF BONE.—M. Flourens, whose inquiries on this subject, published in 1842, are so well known generally, has lately made a further communication to the Academy of Sciences on the subject. M. Flourens maintains—

1st. That bone is formed in the periosteum: 2d. That bone increases by the superposition of the external layers. 3d. That the medullary canal enlarges by the absorption of the internal layers of the bone. The experiments by which he now seeks to demonstrate the first of these propositions were performed upon dogs. In several of these animals a portion of a rib was removed the bone properly so called only being taken away, the periosteum, deta

from it, being left. After several days a small bony nucleus, which increases gradually, and finally connects the two ends, is found in the periosteum, left between the two cut extremities of the rib. The preparations exhibited showed this process of preparation in its different phases, and the formation of the new bone in the periosteum; in the first instance, it is now completely isolated, and distinct from the old bone; it is only by its progressive growth that it finally reaches the extremities of the old bone, and connects these with one another. The 2d proposition, viz., That bone grows by the superposition of external layers, is supported by the following experiments made upon rabbits and dogs:—The tibia in several of these animals having been laid bare, the periosteum was divided, and a piece of platinum wire was thrust between the periosteum and the bone, and then bent into the form of a ring. The bone continued to grow, and as it grew, it covered the ring of platinum wire with its new layers. In the same way the 3d proposition was demonstrated by preparations, which showed that the internal layers of long bones were successively absorbed, and that this successive absorption was the sole cause of the enlargement of the medullary canal. M. Fleurens's paper wound up with some observations on the absorption of portions of the bone of one animal, placed in contact with, or inserted into, the bone of another animal. A portion of the rib of a rabbit, for example, put into a hole in the tibia of a dog, soon show signs of absorption, of erosion, and these are by so much the more decided as the experiment has been continued for a longer time.—*Académie des Sciences*, 30 Sept.

[We have always looked upon the experiments of Dr. Davy and Mr. Gulliver, as related in one of the fasciculi of Pathological Anatomy illustrative of the Pathological Collection at Fort Pitt, Chatham, which may be styled the converse of those of M. Fleurens, last alluded to, as far more extraordinary. Dr.

Davy and Mr. Gulliver found that they could frequently procure the adhesion of a piece of bone of a creature that had long ceased to live—a portion of a human tibia, for example, sawn from a bone that had lain for years in a drawer or cupboard—with the bone of a living animal: a part that had been dried and dead for a dozen years, placed in contact with an analogous living tissue, actually recovered its vitality, and became an integral part of a living animal!—*ED. MED. GAZ.*]

MALARIA.*

A Reviewer of Dr. M'William's "Medical History of the Niger Expedition," in the *Athenæum*, having doubted the existence of Malaria, attributing what are called malarious diseases to other causes, as the "ordinary accidents of climate, heat, and humidity," Dr. M'W. combats the Reviewer's skepticism by a paper in the same journal, for 21st September, 1844.

We suspect that the reviewer had never practised in a tropical or in any malarious climate; else he would not have considered miasmata, malaria, marsh effluvia, or whatever name we may give the poison, as a creature of the imagination. The following quotation from Dr. M'William's "reclamation," must be satisfactory to most of our readers, though ten thousand other instances and facts equally stringent might be adduced in proof of a morbid emanation from certain soils, exclusive of heat and moisture.

"Heat and moisture are conditions of the atmosphere which readily admit of minute quantitative determination, by methods in common use: and if fever were caused by them alone, in Europeans within the tropics, it should prevail wherever their amount is the same. Now, by reference to the meteorological tables in any work, the temperature and

* Having laid before our readers the article in the *Athenæum*, here referred to, as harmonizing with our own oft expressed opinion on the subject, it is but fair to give the following comments on the other and popular side.—*ED. BULL. MED. SCIENCE.*

dew point outside the Niger, where no fever occurred, and while in the rivers, were as follows:

| | Temp. 3 p. m. | Dew point. 3 p. m. |
|---|------------------|-----------------------|
| Passage from Sierra Leone to Accra | 81-13 | 74-93 |
| Outside Niger from 9th to 12th August | 79-00 | 73-70 |
| In the Nun and ascending to Aboh | 80-60 | 74-00 |
| At Aboh, Idduh, and the confluence of the Niger and Tehadda to Sept. 21 | 84-00 | 73-00 |
| Confluence of Niger and Tehadda to Egga | 86-60 | 72-00 |

"Thus, though the expedition was exposed from the 1st of July to the beginning of August, to air containing more moisture, and but little inferior in temperature at the hottest part of the day, to any experienced within the river, not a case of fever made its appearance until the 4th of September, three weeks after it had entered the river, and had been exposed to the emanations from the ordinary recognised sources of malaria. Similar results have been observed elsewhere; in Barbadoes, for instance, no fever occurred among the troops in the garrison during August, September, or October, 1841, and although in November a very violent description of yellow fever broke out, the temperature of the air was lower than in August, and the dew point lower than in September; their means were as follows:—

| | Temp. 3 p. m. | Dew point, 3 p. m. |
|-----------|---------------|--------------------|
| August | 83-77 | 70-61 |
| September | 82-13 | 73-78 |
| October | 82-31 | 72-67 |
| November | 82-83 | 71-67 |

"Hence the connexion between 'heat and humidity' of the atmosphere, and severe remittent, or yellow fever, is by no means so clear as the reviewer would have us suppose. It is, in fact, one of those hasty conclusions which will not stand the test of comparison with observed facts, and could only have been made with a limited view of the history of disease in warm climates.

"At Barbadoes the fever was almost completely confined to one of the regiments composing the garrison, while the other, the men of which were equally exposed to 'heat and humidity,' and performed the same duties with their neighbours, was almost wholly exempt. The cause of the disease in this instance, was very obviously the effluvia arising from a pool of water, immediately to windward of the building occupied by the regiment that suffered.

"But to return to the west coast of Africa. In 1836, H. M. S. Scout, under the command of Capt. Robert Craigie, proceeded to the west coast; and by a careful observance of the stringent 'General Orders' of the senior officer on the station, 'that no ship was ever to remain in port more than forty-eight hours at any one time,' and that officers were so far as was

practicable to avoid entering any of the rivers on the coast,' only two cases of fever occurred in her during the first year, and these were traced to two days stay at Sierra Leone. In the month of April, 1837, Capt. Craigie was obliged to ascend the Bonny river, in the Scout, as far as King Peppel's town, for the protection of the British mercantile interests there. On this occasion he also took the Dolphin, a brigantine, with him, and left the Lyux, another brigantine, anchored at the river's mouth. The Scout and Dolphin were detained nearly a week at Bonny town, and on leaving the river, fever broke out in both vessels, and their united loss by death amounted to five officers and seventeen men and boys, while on board the Lyux not one was even attacked. Bonny town is only about six miles from where the Lyux was lying, consequently there could have been very little, if any difference as to the 'heat and humidity' of the atmosphere in the positions of the vessels that suffered and that which escaped.

"Capt. Brunswick Popham commanded the Pelican, with a complement of 110 white men, for four years and a half, on the east and west coasts of Africa. During this time, his loss by death amounted to three Europeans. He made it a rule to avoid rivers, his boats having on one occasion only been in the Bonny, and that for a very short time. Capt. Popham was on the station during 1835-6-7-8, and a part of '39, during which the mortality on the coast is but too well known. In short, it seems to me perfectly clear, from the evidence of many old African cruisers, non-professional as well as professional, and from my own experience, that, as a general rule, a ship will continue healthy on the west coast of Africa, if she is clean internally, and keeps at sea, and that disease will appear if she remains much nearer the shore, or has intercourse with the rivers. If we admit the immunity in the one case, and the occurrence of disease and death in the other, surely the destructive agency must have been owing to something connected with the land, which is acted upon by the same meteoric agencies as the sea, with this difference, that the land and sea breezes become more feeble as we advance into the interior. The sun is mainly effective from below in heating the atmosphere on land and water, both of which absorb its rays and communicate them to the air above. Theoretically, we would expect nothing pernicious to be evolved from the sea, the surface of which is always in a state of greater or lesser agitation; and practically we find the conclusion to be just. On shore, on the contrary, we have all varieties of soil, in many conditions of which we have a right to infer, that gaseous evolutions will take place by the action of heat; and experience but too plainly tells us, that wherever certain conditions are present within the tropics, there, in general, disease is most rife. It will no doubt be said that we have, as yet, no chemical evidence of the existence of malaria. But be-

cause its precise nature is unknown to us, are we, in the face of such destructive results, to deny its being? We may just as well say, that small-pox and other exanthemata cannot be propagated through the medium of the atmosphere, although the constitution of their poisons has not as yet been recognized by any 'chemist or physiologist.'

"Provided that men have not been for a considerable time exposed to the noxious exhalations within rivers, it seems abundantly evident that their effects are in a great measure counteracted by the air of the open sea.

"In November, 1838, H. M. S. *Pylades* (a ship remarkable for her general salubrity), under the command of Captain William L. Castle, had occasion to be in the Bonny about forty-eight hours; several of her crew were attacked with fever, soon after leaving the river, but they speedily recovered on the passage to Saint Helena, to which island the ship was ordered. Capt. Castle has observed similar results in other ships during a long period of service on the west coast.

"In March, 1839, Capt. Craigie was again called into the Bonny, to settle some disputes between King Poppel and the palm-oil ships. Dreading a repetition of the calamities of 1837, he left the Scout outside, and proceeded up the river in the *Bonetta*, brigantine, commanded by Lieutenant (now Commander) John Stoll, taking with him, in addition to her crew, Lieut. Frederick A. Campbell, Mr. Bainbridge, mate, and myself. We remained off the town about thirty-six hours. The day on which we got out of the river, upwards of twelve of the seamen and marines presented themselves to Mr. Kinneer, the medical officer of the *Bonetta*, complaining of heat of skin, vomiting, and other febrile symptoms, which, however, soon disappeared as the vessel proceeded to sea.

"From these and numerous other instances, it would appear that the action of miasma is quite analogous to that of other poisons, inasmuch as its injurious effect is in proportion to the amount taken into the system. By remaining long in rivers, the quantity imbibed will be very commonly sufficient to destroy life, while a short stay in such localities will only produce a temporary disorder of the functions."

SOME HINTS ON THE MOST EFFICIENT MODES OF ADMINISTERING MEDICINES.

BY A PRACTITIONER OF HALF A CENTURY.

Many of the most important discoveries and improvements in medical science are rendered comparatively useless, in consequence of being unskillfully applied to actual practice. In no department of knowledge is this

so conspicuous than in thera-

peutics. Man (and I believe the same remark applies to all created beings), is born with a kind of instinctive antipathy to physic, which antipathy he retains from the cradle to the grave. Look at the ingenious spoons that have been invented to force physic down the throats of infants! Observe the mantel-pieces of sick chambers, and count how many phials are either uncorked, or only half emptied? How great a proportion of mankind hate the very name of physic! If the stomach is apt to turn at the thought of medicine, when we are in health, how much less capable is it to bear nauseous drugs in the various forms of disease, nine-tenths of which affect the stomach sympathetically with squeamishness, nausea, and aversion to food as well as physic? The evil consequences of nauseous forms of medicine being used in sickness, are great beyond all calculation or belief. One result is, that medicine is not taken in sufficient quantity—sufficiently often,—or for a proper length of time.

What practitioner will fail to recognise the following picture of almost daily occurrence? A medical man is in anxious attendance on a patient—say a lady after confinement, and threatened with some grave malady—peritonitis, for instance; he prescribes what he conceives to be active and efficient remedies for the night, and gives strict injunctions to the nurse. In the morning, when he calls, he meets the nurse on the stairs. Have you given your mistress the medicines punctually? Most punctually, sir. Well, what has been the effect? "Brought everything up again sir." What, all? "Every drop, sir—and I thought she would have brought her very heart up with it." After such intelligence, the feelings of the doctor, on entering the chamber, are not particularly enviable. Now all this is more frequently owing to the form than the substance of the medicine exhibited.

In chronic diseases, where the re-

medial process is necessarily chronic also, we are daily baffled by the repugnance — nay, the resistance of the patient to a protracted course of physic. Yet it might very generally be so contrived, that the patient would desire, rather than loathe his medicines!

I am aware that in some acute diseases, the state of nausea itself is desirable and salutary. But it is not the mere nausea or sickness which lessens the velocity of the circulation, opens the secretory vessels, and checks inflammation. These remedial processes depend much upon the *quantity* of medicine — say antimony — which the patient can bear in order to induce them. Thus double or triple the quantity of tartrate of antimony will be borne, before sickness is induced, if given in an effervescing draught, as compared with the same medicine given in plain water. And the remedial effects will be in proportion. This is a truth that should ever be held in mind, and the principle was well understood by Rasori, Thomasini, and others. The contra-stimulant effects of antimony are trifling during the nausea and sickness at the beginning: — it is when the *tolerance* is acquired that the inflammation or high fever is controlled.

But there is a large class of diseases in which the stomach is morbidly irritable, and where nauseating medicines are positively injurious. Putting aside the multitudinous forms of dyspepsia, we have affections of the uterus, the kidney, the liver, the pancreas, &c., where the stomach is prone to disordered function, and where it is of the greatest consequence to exhibit medicines in forms that will tranquillize rather than nauseate the stomach. Diseases and disorders of the kidney are now acknowledged to be much more frequent than they were formerly suspected to be — and these are very generally attended with gastric irritability. In these it is of great importance not to ruffle the stomach

by medicines. In affections of the brain, now so exceedingly common in consequence of the advanced stage of civilization, and the operation of various perturbing moral causes, the stomach is often the organ most conspicuously deranged — and we are not seldom foiled in the exhibition and perseverance of proper remedies, from the sympathetic disorder of stomach.

Nine-tenths of the cures that are said to be performed by homœopathy, result from the spare diet and the nullity, as it were, of medicine employed. Of all the medicines that are prescribed by the physician, the class of salines are the most generally beneficial, as opening the secretory organs, as the skin, the liver, the kidneys, &c., besides improving the state of the blood, and restraining febrile action in the constitution. These, when exhibited in an effervescing state, are far more palatable, as well as more efficacious, than when given in a plain form.

Tonics, on which the routine practitioner so much relies, and which he exhibits with no sparing hand, are more frequently injurious than beneficial. They give a feeling of tone for a time; but they lock up the secretions, increase too much the appetite, and lay the foundation for future states of plethora, congestion, or indigestion.

Now saline effervescents may be made the vehicle for many of the most powerful tonics, and indeed the most potent medicines which we possess. The citrate of iron, colchicum, antimony, arsenic, quinine, iodine, &c., &c., may all be exhibited in a form that increases their remedial efficiency, and lessens their tendency to nauseate the stomach.

SENEX.

TREATMENT OF FRACTURES WHICH ARE SLOW OF UNION.

ON THE USE OF THE IMMOVEABLE APPARATUS.

I select these points for consideration in the treatment of fractures, because it happens that they can be practically il-

illustrated by cases which are, or recently were, in the hospital. There are fractures which are slow of union, and fractures which will not unite; fortunately the former are of most frequent occurrence; they require the help of good apparatus, and it is to the nature of this apparatus, and to the principles which should guide its use, that I am about to advert. Formerly, and indeed until within a few years of the present time, no other view was generally adopted respecting the treatment of fractures slow of union than that if at the expiration of the ordinary period, the union was ascertained to have failed, the splints were re-applied, and the patient again confined to bed, with a more strict enjoinder of the absolute quietude of the broken bone, and that if after the lapse of many more weeks no advance towards the union could be ascertained, it was pronounced an ununited fracture, remediable only by sawing off the ends of the bone, or by the passage of a seton between them, or by some other of the measures appropriated to this class of cases. But we have now learned by experience that in the event of a fracture failing to unite within the usual period, methods are to be adopted far more gentle, and, what is more important, far more likely to be successful, than any one of the severer proceedings just indicated. These methods are, exercise of the limb for the advantage of the action of the muscles surrounding the broken bone, maintenance of firm pressure against the portions of bone, that they may be kept steadily in contact, and if possible by their periosteal surfaces.

Influence of the action of the Muscles around the slowly uniting Fracture.

Of this there can be no doubt; it is evidenced to us in the many instances of fracture of the tibia not firmly united within the ordinary period, wherein the patient has been desired to move about on crutches, not bearing weight on the limb, but swinging it about freely, and in a short time the uniting medium, which was flexible, is found to be perfectly firm. I lately had in the hospital

a woman, aged 32, with a fracture of the femur, at the junction of its upper and middle third; it was treated strictly by confinement on the back, with the application of a long splint to the outer side of the limb. At the expiration of two months, the ends of the bone were ascertained to be freely moveable. The thigh was then kept firmly encased in leather splints through the next two months, at the expiration of which the ends of the bone were found to be still freely moveable; it was now determined again to apply the leather splints in a manner to maintain firm pressure against the end of the bone, and besides, to encase the thigh in the splints composed of layers of linen cemented together by the mixture of white of egg and flour, and around these to apply the starched roller. The limb being thus secured, the patient was desired to move about freely on crutches. Almost from the commencement of this plan, the woman began to express a consciousness of firmness in the limb of which she had not before been sensible. After another six weeks, the bone had become so firm that she could bear weight upon it, and she left the hospital walking perfectly well. I could draw no other conclusion from this case than that the firm union of the fracture was mainly attributable to the adoption of the proceedings having for their object the free action of the surrounding muscles. Since, in this case, the firmness of union had not commenced at the expiration of four months from the occurrence of the fracture, it almost warrants the conclusion that no period is too late for the commencement of that stage of the reparative process of fracture upon which the firmness of its union depends.

Influence of pressure upon the ununited fracture.—The application to the limb of stiff leather splints, or other apparatus, calculated to maintain firm pressure against the bone, is undoubtedly a most important part of the treatment of ununited fractures, and the merit of first establishing it belongs to Mr. Amesbury.* It should not be the object to maintain the fractured ends of the bone in contact, but rather that the two portions of the bone should overlap, to allow of their periosteal surfaces being firmly pressed together, for as the tissue of periosteum is more readily disposed to the deposit of osseous matter than the tissue of bone, accordingly by the actual and firm contact of the periosteal surfaces the advantage is ob-

* Remarks on the Nature and Treatment of Fractures, vol. 2.

tained of a better chance of the union of the fracture, which well compensates for the shortening of the limb consequent on the overlapping of the two portions of the bone.

On the use of the Immoveable Apparatus.—The treatment of fractures by the immoveable apparatus, as it is termed, has been of late especially adopted by Dr. Scutin, Chief Surgeon of the Hospital at Brussels. The object aimed at by this treatment is to avoid the inconvenience of confinement, by enclosing the limb in an apparatus sufficiently strong to prevent the separation of the fractured surfaces; and of sufficient lightness to allow the limb to be moved about with ease. Varieties of apparatus have been recommended for this object; that which I employ in the hospital consists of the splints, composed of layers of linen, cemented together by a mixture of white of egg and flour, and of the starched roller. The excellence of the splints thus constructed is, that with the firmness of the case they form, they are so exactly moulded to the inequalities of the limb, that when confined to it by the turns of the roller, not the least movement of the limb within the splints can occur; and this is obviously essential to the quietness of the ends of the bone. Curiously enough, this turns out to be the revival of a practice adopted in by-gone times. Cheselden, in his *Anatomy*, states "that a professed bone-setter living in Westminster communicated to him the following method of treating fractures; this way was, after putting the limb in a proper posture, to wrap it up in rags, dipped in whites of eggs, mixed with wheat flour; this drying, grew stiff, and kept the limb in good position;" and in his observations appended to Ke Dran's *Surgery*, Cheselden observes, "there is no bandage equal to this for a fractured leg. I always use it, leaving that part upon the tibia very thin, that if it grows loose by the abatement of swelling, I then cut out a piece, and bind it closer. Upon a journey, I once set the cubital bones of a gentleman's arm that was broken; and making use of this bandage, he the next two days made long journeys without any inconvenience, and at the end of forty days took it off, and was perfectly well."

There are objections to the indiscriminate use of the immoveable apparatus, and especially to its application upon a fractured limb immediately after the receipt of the injury; still, however, under certain circumstances, it is a most valuable addition to our plan for the management of fractures. Upon the subsidence of the inflammation

and swelling immediately consequent on a fracture, the limb may in general with safety be enclosed in such splints as I have described, and which, when properly applied, will prevent any motion between the ends of the bone, and with a fracture of the femur as of the tibia, by the application of these splints, the patient will be enabled to move about on crutches, and even bear weight on the limb long before the fracture is firmly united. In several cases of fracture of the tibia I have by means of this apparatus been enabled to discharge the patient within little more than a fortnight from the occurrence of the accident, when, for particular reasons, it has been an object of importance to leave the hospital at this early period, instead of remaining here the usual time of five or six weeks. Recently there were in the same ward two cases of simple fracture of the leg, to which this view of the subject especially applies; they occurred in women who were oppressed by anxiety to return home to the care of their families; one was a fracture of the tibia and fibula, near the ankle-joint; and on the seventeenth day, the limb being encased in the immoveable apparatus, she left the hospital, bearing weight on it, and moving about comfortably with the help of crutches; the other was a fracture of the tibia alone, through its centre, and on the nineteenth day, with the same apparatus applied to the limb, she left the hospital, moving about without uneasiness. In another class of cases the greatest benefit has been derived from the use of the immoveable apparatus. I allude to fractures of the thigh and leg in aged persons, in whom, from their not bearing confinement well, the stomach has become deranged, with failure of appetite, and obvious decline of the vital powers; directly these changes are noticed, the injured limb is enclosed in the immoveable apparatus, whereby the patient is enabled at once to get up and move about on crutches, and the unfavourable symptoms have immediately disappeared. I feel certain that by adopting this line of conduct the lives of some old people have been saved, who otherwise would have sunk. Such were the circumstances of the following case. A woman, aged sixty-four, was admitted with a comminuted fracture of the tibia and fibula. When she had been confined upon her back for a week, the skin upon the sacrum became red and painful; it was evident that sloughing of the parts would here quickly ensue if pressure were continued upon them; consequently, I had the patient placed on her side, but the skin upon the

trochanter soon suffered in the same way; at the same time, the appetite failed, and from the rapid decline of the vital powers, it soon became evident that to confine the patient any longer in bed would certainly be fatal. Accordingly, on the tenth day, I had the leg enclosed in the splints composed of layers of linen, cemented together by the mixture of white-of-egg and flour, thus enabling the woman at once to sit upright in bed, with her legs resting on the floor, and in a few days to move about on crutches. The most marked improvement, in every respect, immediately followed this change in the treatment. The leg, which before the application of the immovable apparatus was severely painful, now became perfectly easy; her nights had been restless, but she now slept soundly; appetite returned, and her vital powers quickly rallied. As the limb continued free from pain, the splints were not removed for a fortnight; then they were re-applied. At the end of six weeks, the woman left the hospital with the bones in good position, and the fractures firmly united. This woman certainly owed her life to the help that was obtained in the management of her case by the application of the immovable apparatus to her leg.

The following cases are further illustrations of this treatment of fractures slow of union.

A man, aged 46, was admitted with a very oblique fracture of the tibia and fibula a little above their centre. After strict confinement in bed for seven weeks, with the application of the ordinary splints, not the slightest union of the fracture had taken place. The leg was then firmly encased in leather splints, fixed by strips of adhesive plaster, and surrounded by a starched roller, and he was desired to move about on crutches. When this plan had been in operation about a month, I examined the limb, and found the fracture in progress of union. At the end of another fortnight he could bear weight on the limb; soon after which he left the hospital with his leg perfectly firm.

A man, aged 66, was admitted with a fracture of the femur about its centre, from a fall into a saw-pit. The limb was strictly confined for six weeks in the straight position, with the long splint applied to its outer side, and through this period the limb had not been once disturbed; but on removing the splint there was not the slightest union of the fracture. The limb was then treated in the same way for another month, at the expiration of which, the ends of the bone were found to be still freely moveable.

The thigh was then encased in leathern splints, bound very firmly to it by strips of adhesive plaster, and the whole surrounded by the starched roller. At the same time, the man was urged to move about on crutches, which, after a little time, he accomplished. About once a fortnight, the leather splints were removed and replaced, and with the satisfaction of finding the ends of the bone gradually less moveable; but it was not until five months had elapsed that the uniting medium had become firm enough to support the weight of the body; this, however, it ultimately did, without yielding, and without pain.—*Substance of Clinical Lectures by Mr. Stanley, Bartholomew's Hospital.*—*Med. Gaz.*

SINGULAR CASE OF FATAL INTRA-UTERINE HEMORRHAGE.

By William Thompson, Surgeon, Bognor.

Mrs. K., aged about 45, who had previously borne twelve children, and who was then at the end of the ninth month of pregnancy, retired to bed about nine o'clock on the night of the 5th of October, 1844. She had been perfectly well during the day, and, as far as I can ascertain, had felt none of the premonitory symptoms of labour.

About half-past nine o'clock she awoke her husband, and told him that she felt in pain, and must get out of bed; she did so, staggered against a chest of drawers, and fainted. He got her upon the bed, but says that she did not recover consciousness for a quarter of an hour. He wished to send for the midwife, but she said it was of no use to do so, as she had no pains of any consequence.

From this time till six o'clock the next morning I can obtain no very clear account of her state. At that hour the midwife was called, who found her in a very low exhausted state, her pains trifling, and recurring at long intervals. She found the os uteri well dilated, and the presentation natural, the vertex being in the brim of the pelvis.

The poor woman continued to get weaker and weaker for the next two hours; her respiration difficult, and articulation low and indistinct. At last

she said she was sure there was something wrong, that she felt as if she was dying, and requested a surgeon to be sent for. On reaching the house, Mr. Peskitt found that she had breathed her last, and observed that she had the blanched appearance of a person who had died of hemorrhage.

On examination per vaginam he found no discharge of any kind, the membranes entire, os uteri fully dilated, and the head in the brim of the pelvis.

I assisted at a post-mortem examination of the body, about fifty hours after death (up to which time there had been no discharge from the vagina). On opening the abdomen, we found the uterus very large, and apparently filling the whole cavity, pressing the whole of the floating viscera strongly upwards and backwards; these latter had a very bleached appearance, and all their vessels were empty. On raising the fundus of the uterus an immense quantity of bloody fluid rushed from the vagina; and on cutting into the womb (the walls of which were very thin), we found that it still contained more than two quarts of fluid and grumous blood, mixed with large coagula, which completely surrounded the child, enveloped in its membranes entire, with the head in the brim of the pelvis.

The placenta was wholly detached from the uterus, but the place where it had been attached was evident enough, on the right side of the womb, below the fundus: we examined this part very narrowly, but could discover nothing unusual in its appearance, or in that of the placenta. I think there can be no doubt that the hemorrhage was caused by a partial detachment of the placenta, about the time she first complained of pain and faintness, and that it continued till nearly all the blood in her body was poured into the cavity of the womb. The total detachment of the placenta might have been caused by the immense distension of the womb, and the pressure of such a quantity of blood between its parietes and the membranes.

—*Med. Gaz.*

MISS MARTINEAU ON MESMERISM, AND MESMERISM AT THE SANATORIUM.

The spirit of proselytism is a fine thing; the world would probably be a very dull place without it. The grand objection to it is, that it is commonly displayed on matters which are really of no moment in themselves; which are trifles both to society and individuals; in fact, though both society and individuals commonly enough look at them through so highly magnifying a medium that persuasion of their paramount importance becomes a canon of faith, a revelation both on outward and internal evidence. Miss Martineau had been long an invalid; she was held, we believe, to have been labouring under organic disease of the uterus, yet happily the malady seemed slow in its progress, and if it confined her to her room, it appeared to abate little or nothing of her intellectual energy. We have at least one delightful work from the able pen of Harriet Martineau since she became a sufferer—we allude to "Life in the Sick-Room"—a book full of exalted philosophy, teeming with the truest spirit of piety and philanthropy. The disease of our gifted countrywoman, thank God! seemed slow to kill, and finally—and here we again say, thanks be to God!—it seemed to have come to a stand still.

"This is not the place in which to give any details of disease," says Miss Martineau (*Atheneum*, Nov. 23d), "it will be sufficient to explain briefly, in order to render my story intelligible, that the internal disease under which I have suffered appears to have been coming on for many years; that after warnings of failing health, which I carelessly overlooked, I broke down while travelling abroad, in June, 1839;—that I sank lower and lower for three years after my return, and remained nearly stationary for two more, preceding last June. During these five years, I never felt wholly at ease for one single hour. I seldom had severe pain; but never entire comfort. A besetting sickness, almost disabling

from taking food for two years, brought me very low; and, together with other evils, it confined me to a condition of almost entire stillness,—to a life passed between my bed and my sofa. It was not till after many attempts at gentle exercise that my friends agreed with me that the cost was too great for any advantage gained: and at length it was clear that even going down one flight of stairs was imprudent. From that time I lay still; and by means of this undisturbed quiet, and such an increase of opiates as kept down my most urgent discomforts, I passed the last two years with less suffering than the three preceding. There was, however, no favourable change in the disease. Everything was done for me that the best medical skill and science could suggest, and the most indefatigable humanity and family affection devise; but nothing could avail beyond mere alleviation. My dependence on opiates was desperate. My kind and vigilant medical friend,—the most sanguine man I know, and the most bent upon keeping his patients hopeful,—avowed to me last Christmas, and twice afterwards, that he found himself compelled to give up all hope of affecting the disease,—of doing more than keeping me up, in collateral respects, to the highest practical point. This was no surprise to me; for when any specific medicine is taken for above two years without affecting the disease, there is no more ground for hope in reason than in feeling. In June last, I suffered more than usual, and new measures of alleviation were resorted to. As to all the essential points of the disease, I was never lower than immediately before I made trial of Mesmerism."

Few medical men of any experience will have the slightest difficulty in perfectly comprehending the state so graphically described by the sufferer. It is seen every day in women at the turn of life, and the grand mistake that is ever committed in regard to it is to look on mere functional derange-

ment, accompanied by pain and excessive discharge, as organic disease—as cancer or polypus of the uterus. We are not fond of putting our brethren in the wrong in the Medical Gazette; but if Miss Martineau's case were diagnosticated as either cancer or polypus, and she recovered, even with the assistance of mesmerism, without a separation, naturally or artificially brought about, of the diseased parts, in either case, the first position we take up is that her medical advisers were mistaken in their view of the nature of her malady; that the disease was functional, not organic, and that the patient would have recovered—was in fact recovering, independently of mesmerism. There are curative means not suspected of the vulgar, of sovereign efficacy in such a complaint as that under which Miss Martineau laboured—*rest and time*. And we beg to assure her that *there is no "specific medicine"* for the malady with which she appears to have been mistakenly supposed to be affected, nor yet for that with which she was probably affected in fact—or if there be, it is a combination of the very remedies under the prolonged use of which she has most happily, as she says, been "restored to the full enjoyment of active days, and nights of rest, to the full use of her power of body and mind:" the remedies alluded to are *rest and time*.

Much, of course will be made of Miss Martineau's case by the mesmerists—it is a successful one; it will be put into the mouth of rumour with the hundred tongues, and bruited over the length and breadth of the land. We do not observe that our friends the mesmerists are more candid than other enthusiasts and proselyte-makers; when they fail they say nothing of their failures; they are only loud when they succeed; like the lithotomists of old, who vaunted loudly enough their fortunate issues, but left the sod undisturbed that covered the dead men's ashes. The mesmerists tell us of the cases in which limbs have been amputated and breasts

removed without the privity of the patient; they say nothing of the cases in which their *passes* and *manceuvres* had no influence in diminishing pain or looking up the senses in unconsciousness. A case of this kind, however, has just occurred at the Sanatorium, and we who are no mesmerists venture to make it known in its general features: Admission into the Middlesex Hospital was sought for a patient affected with a disease of the mamma, which, as being deemed of an incurable nature, was believed to require extirpation. The patient, however, having friends among the mesmerists, they wished that she should enter the hospital on the understanding that they should be allowed to practice upon her, as well as the surgeon under whose immediate charge she was to be placed. This was objected to on the part of the surgeon, who, as officer of a public institution, did not feel himself warranted in countenancing any procedure in the efficacy of which he did not believe, and which was matter of dispute with the profession at large. He had no objections to the mesmerisers exercising their art on the patient; the breast ought to be removed; he was ready to remove it, the patient being in the mesmeric sleep; but he would not commit his public office to a measure the efficacy of which was generally discredited.

The patient was therefore removed to the Sanatorium; she was well mesmerised, and Mr. Arnott removed the breast. The operation was performed with rapidity and precision; yet not without the poor patient giving sufficiently obvious and distressing indications, both by movement and voice, of the pain she endured. — *Med. Gaz.*

ON THE WHITE OR OPAQUE SERUM OF THE BLOOD.*

By ANDREW BUCHANAN, M.D.
Professor of the Institutes of Medicine in the University of Glasgow.

"It is well known to all who have been in the habit of examining the characters of

* From the Transactions of the Glasgow Philosophical Society, March, 1844.

the blood, that the serum which separates from it, instead of being transparent and of a yellow colour as we usually find it, is sometimes opaque and turbid, white as if milk had been diffused through it, or otherwise discoloured. Such serum is usually spoken of as white or milky serum."

After an historical view of the observations made and opinions entertained upon the subject of milky serum, in which Haller, Tulp, Hewson, Hunter, Dr. Trail, Dr. Christison, Dr. Williams, and M. Lecanu, are referred to, Dr. Buchanan proceeds to say: "My attention was particularly directed to this appearance of the serum in the year 1840; owing to the frequency with which it presented itself during some experiments I was then engaged in making on the constitution of the blood. I observed with Hunter, that it was of very common occurrence in the blood of young women, who desired to be bled, either because they were, or supposed themselves to be, pregnant; and whom, if no circumstances forbade, it was the custom to gratify in their request. Now, as these young women were for the most part strong and lusty, and therefore likely to take their food well, I was in doubt whether to ascribe the whiteness of the serum to their peculiar state of body, or to the food which they had probably taken not long before. To resolve these doubts, the most direct mode was to have a person in sound health bled at different periods after a full meal, so as to observe the effects of digestion upon the blood. Accordingly, a strong healthy young man, to whom a good dinner was an equivalent for the loss of a few ounces of blood, was easily prevailed upon to submit to the following regimen and treatment. He had no breakfast, and at four o'clock had for dinner one pound of beef-steak, half-a-pound of bread, sixteen liquid ounces of brown soup, and half-a-bottle of porter. Three ounces of blood were then taken from a vein in the arm at three different periods; the first time, half an hour after the meal; the second time, an hour and forty minutes after it; and the last time, next morning at eight o'clock, or sixteen hours after the meal, no food having been taken in the interval. The blood as it issued from the vein had the usual appearance, and the serum which separated from it was about the same in quantity each time. The first time the serum was whitish and turbid; the second time it was like whey; while the third time it was perfectly limpid. The crassamentum on the two first occasions exhibit-

ed nothing peculiar, while on the last it was covered with a transparent fibrinous crust beautifully interspersed with white dots; which led the medical friend, who assisted me in these investigations, to compare it to a precious stone.

As it might be supposed that this young man's blood was white before he took dinner, the two following trials were made to obviate that objection.

A vigorous man of about 35 years of age, after fasting 19 hours, had for dinner twenty ounces of beef-steak, sixteen liquid ounces of bread. He was bled immediately before his meal, and three times after it, two ounces of blood being taken away each time. The serum obtained from the first bleeding before the meal was perfectly limpid; the serum from the second bleeding, three hours and fifteen minutes after the meal, was turbid; the serum from the third bleeding, eight hours and fifteen minutes after the meal, was still thicker; while that from the last bleeding, eighteen hours after the meal, was again quite limpid, although some supper had been eaten in the interval.

The young man first mentioned, after fasting eighteen hours, dined upon sixteen ounces of brown soup, four ounces of bread, eight ounces of potatoes, twenty ounces of beef-steak, and sixteen ounces of London porter, and fasted eighteen hours after the meal. He had blood taken from his arm four times to the extent of two ounces each time. The serum of the blood first taken, immediately before the meal, was of an amber yellow, and quite transparent; the serum from the second bleeding, two hours and ten minutes after the meal, was turbid; the serum from the third bleeding, eight hours after the meal, was exactly of the colour of water gruel and quite opaque; the serum of the blood last taken, eighteen hours after the meal, was still turbid, its limpidity not having been, as after his usual fare, restored by an eighteen-hours' fast.

In neither of the two last cases did the blood, as it issued from the arm, present white streaks or any thing else unusual. The crassamentum of the blood drawn before the meal was in both cases of the usual red colour on the surface, as also that drawn first after the meal in the last case; but in all the other instances it exhibited the same pellucid fibrinous crust already described, although not dotted in the same remarkable way. We can scarcely avoid the conclusion that this pellucid crust is connected

with finished digestion, when we reflect that out of nine bleedings practised within eighteen hours after a very full meal, this crust was observed on every occasion, if we except those in which the blood was drawn within three hours and a quarter of the period of taking the meal.

These observations, the accuracy of which I have since had opportunities of confirming, appear to me to leave no doubt as to the origin of the white colour of the serum of the blood. When a healthy man is bled fasting, his blood yields serum of a transparent yellow colour, like light Sherry wine, varying in the depth of the yellow tint, but always perfectly clear. In about half an hour after taking food, the serum becomes turbid; the discoloration increases during several hours till it attains its maximum, after which the serum becomes again gradually clearer, till its limpidity is perfectly restored. The period at which the discoloration is greatest, and the length of time during which it continues, must depend mainly on the quantity of food taken, but also in some degree on its quality, as some kinds of food are digested more readily than others. It may, however, be stated, so far as the observations I have made enable me to judge, that after a full meal of different kinds of food, the discoloration is greatest about six or eight hours after the repast, and that probably somewhat more than an equal period elapses before the serum regains its limpidity. The differences of colour, which are considerable, probably depend on the different substances digested: and it is interesting in this point of view to remark, that the colour varies in successive bleedings after the same meal, as if the different alimentary principles produced different kinds of discoloration, and entered the blood-vessels at different periods.

If these views be correct, it is clear that a milky state of the serum of the blood is a phenomenon of the healthy body, and cannot in itself be regarded as a symptom of disease. There are, nevertheless, certain circumstances in which this appearance may serve to indicate the existence of disease, as when it continues during a longer period than according to the laws of health it ought to do. A case is mentioned above, in which, after eighteen hours fasting, the serum of the blood was still loaded with white particles. The only inference that could be drawn from this fact, was, that the individual had taken a more than usually large quantity of food, and that the di-

gestion in the blood-vessels was protracted in proportion. Perhaps it would not be warrantable to deduce any other inference, even were the milkiness to continue for twenty-four or thirty-six hours after a full meal. But when this milkiness continues for several days, although the appetite is gone and no fresh supply of food taken, it then becomes probable that the digestion in the blood-vessels is no longer going on, as in the healthy state; being, like all other functions of the body, subject to retardation and derangement from the condition of the organs by which it is performed. Thus Morgagni found the serum white in the blood of two patients labouring under fevers; of which he describes the one as malignant and attended with much danger, and the other as verging to malignity. In the former, the whiteness was observed in blood taken by the three last of four venesections which were required; and in the latter, in blood taken on the third, and again on the fifth day of the disease.

I conclude, with a few remarks upon the physical and chemical characters of white or milky serum.

The colour of the serum is generally a milky-white; sometimes a cream-yellow, or a yellowish-brown; when the liquid bears a striking resemblance to thin oatmeal gruel. There is sometimes little discoloration, the serum merely losing its limpidity, and changing its hue so as to resemble a weak syrup made of coarse sugar.

In all the instances in which I have examined the liquid with the microscope, it showed a great number of solid granules mechanically suspended in it. They are less in size than the corpuscles of the blood, generally of irregular shape, but often spherical, and having the appearance of a nucleus in the centre, most probably from the refraction of light. These particles were as abundant in the syrup-like serum as in the more opaque varieties; but they were less regular in shape, and seemed to be themselves translucent.

It sometimes happens, as has been observed both by Hewson and Hunter, that after the liquid has stood for some time, the white particles separate from it, and rise to the surface like cream. Hewson attempted to effect this separation by churning the serum, but without success. I accidentally hit upon a process by which the object is readily effected. It consists in saturating the liquid with common salt, which so much

augments its specific gravity, that the opaque particles becoming relatively lighter, rise to the surface, either immediately, or soon after. This process has the further advantage of preserving the liquid.

The white matter separated by the filter is insoluble in water, and is thus easily purified from the salt with which it is mixed on the filtering paper, by steeping the latter in water, and then cautiously drawing off the water holding the salt in solution. Thus obtained it has the form of a fine white powder, which in two specimens in my possession bears a very close resemblance to wheaten flour. On holding a little of it in the flame of a spirit lamp upon a platinum spatula, it was immediately charred, and burned away almost completely. Dr. R. D. Thomson was kind enough to examine a specimen of it for me, but it was too minute in quantity to admit of a satisfactory analysis. He found it quite insoluble in ether and alcohol, while it dissolved in caustic potash. On boiling it in a solution of sugar of lead, it gave traces of black sulphuret. He concluded, therefore, that it contained no fixed oil, and consisted most probably of a *protein compound*, like albumen or fibrin.

Postscript.—After the meeting of the Society on the evening of the 13th instant, it occurred to me as possible that the starch might be converted by the organs of digestion into sugar, and be absorbed in that form into the blood. I accordingly procured some yeast next day, and treated with it the serum of the blood, which had been taken three hours after the meal, proceeding in the same way in which I am in the habit of examining diabetic urine. Fermentation ensued; and continued about forty-eight hours, the heat not having been regularly maintained. The serum from the blood of another individual who had used the same diet, but more sparingly, was treated in the same manner, when the same result ensued, only the gas was somewhat more abundant. But what struck me as more remarkable still, was, that the serum of the blood which had been taken from both these individuals after fasting, likewise fermented; although the quantity of gas obtained was much less than in the former instances. I found that the largest quantity of gas obtained in these experiments was about equal to that obtained by means of the same apparatus, from a solution of sugar in water, containing five grains to the ounce. Should farther observations confirm the idea here suggested of the existence of sugar in the

blood as a normal product, it is obvious that a corresponding modification must be made of the prevailing theories of diabetes, according to which the production of sugar is regarded as the essential derangement of action in which that disease consists.

[Dr. Buchanan's observations go to prove that the ordinary kind of white serum is caused by the presence of chylous matter in the blood; and this conclusion agrees with the researches of Mr. Gulliver, who states that he often observed a milky condition of the serum in young and perfectly healthy animals during digestion, both in the arterial and venous blood (Appendix to Gerber's Anatomy, p. 21 and 22). He also found the milky matter to be, both in its chemical and microscopic character, identical with the *molecular base* of the chyle, which there is every reason to believe is of a fatty nature (Gerber's Anatomy, Note, page 56, and Appendix, p. 22). It is true that a few globules about 1-6000th of an inch in diameter existed in the milky matter; but the mass of it was composed of very minute molecules, which may be assumed as the characteristic element, as the ground or base of the chyle.

And thus far it is easy to reconcile these facts with the facts announced by Hewson; who states that the milky matter of blood is composed of exceedingly minute globules, comparable to the smallest globules of milk, spherical in shape, regular or equal sized, and only just visible under a lens of 1-23d of an inch focus (Exp. Inquiries, part 1, third edition, page 141, et seq.); a description agreeing remarkably well with Mr. Gulliver's account of the molecular base of the chyle, especially when we recollect that Hewson, like Gulliver, considered the milky matter of blood to be of a fatty nature (loc. cit., p. 149).

Thus far Hewson's facts seem to be incontrovertible. Not so, however, the explanation which he has given of these facts. He did not think it probable that the milky serum was caused by unassimilated chyle, because he found the appearance in persons of bad appetite, who were subject to vomiting; and finding this appearance in the blood of persons of plethoric habit, inclined to torpulence, with a stoppage of a natural evacuation, he conjectured that the milky serum was caused by reabsorbed fat (loc. cit., p. 150). Yet he adds in a note, that he would not conclude that the chyle does not in the human subject occasionally colour the serum; and, if, like Dr. Buchanan and Mr. Gulliver, Hewson had carefully observed the blood of healthy brutes and of man during digestion, it is probable that

his deduction from the facts would have been similar to the results above given.

But, after all, it is not improbable that there are two, if not more kinds of milky serum, one dependent on an admixture of chylous matter, and another connected with causes of a more obscure nature occurring in disease. Of the latter sort, the white serum observed by Morgagni in malignant fever, and cited by Dr. Buchanan (p. 7), may be regarded as an example.

The subject, therefore, requires further research; and it is to be hoped that this will be undertaken by an observer like Dr. Buchanan.—ED. GAZ.

BULLETIN.

Philadelphia, January, 1845.

We have begun, in this number of the Bulletin, the republication of a "*Treatise on Inflammation as a Process of Abnormal Inflammation*," by Mr. Bennett. The investigations of this gentleman in morbid anatomy, illustrated by microscopy, have been noticed before now in our pages. The present treatise will be found by the reader to contain many useful facts and frequent suggestions in the same line of inquiry.

Effects of Cinchona and the Sulphate of Quinia.

M. Felix Jacquot, principal of the medical clinic of the military hospital of instruction at Metz, has a long paper in the *Archiv. Gén. de Méd.*, September, 1844, on the relative operation of Peruvian bark and its chief alkaloid in various diseases. There is no novelty, assuredly, in his telling us that the bark is a powerful tonic and a good febrifuge; but when he adds, that quinia and its salts are eminently febrifuge but not tonic, or, if so, in a very limited degree, his views will sound odd to many who have not analysed the phenomena of fevers, and noted the effects of different classes of medicines on these diseases, carefully separating what is really tonic in their operation, from that which is sedative. In the cinchonic bark there are, as M. Jacquot

points out, but not for the first time, two elements, the tonic, and the modifier of the nervous system. The latter is quinia, while the former is made up of the union of several principles, but especially by the cinchonic bitter of Reuss, who regarded this substance as the active principle.

The most accredited succedanea for cinchona, regarded as a febrifuge, are tonics and sedatives. Of the former, the list is very large, and includes chalybeates, various vegetable bitters, and astringents, to which may be added substantial nourishment. The operation of this class, as febrifuges, is slow and gradual; but on account of this slowness of effects, they cannot be relied on to cut short fevers at once, as quinia does. They are adapted to debility, anemia, and other sequelæ of protracted fever. They complete what quinia had begun. To this latter we have recourse in all paroxysmal attacks with recurrence, in nervous complications, as in congestive fevers of pernicious intermitents, and in plethoric states in which tonic operation is not demanded. Cinchona fulfils, therefore, other indications than quinia, being both a specific febrifuge in consequence of this latter principle, and a general tonic owing to its bitter, and, most probably, other principles. This opinion, which might be inferred from the chemical composition of the Peruvian bark, independently or in advance of clinical trials, is probably the true one; but which, of late years, seems to be forgotten or neglected in the treatment of our periodical fevers.

M. Jacquot declares his belief that quinia is a sedative of the nervous system, and probably of the sanguiferous system also. In support of this view he refers to the most approved substitutes for quinia, independently of the tonic class, such as various narcotics, the combinations of cyanic acid with different bases, and such sedatives as tartar emetic, &c.; and next, he directs attention to the physiological effects of quinia in large doses, as being sedative, and to the practitioners who daily em-

ploy quinia as a medicine of this nature.

We may be supposed to accord our assent to these views of M. Jacquot, as we have for some years past entertained and publicly expressed similar ones. In one of our lectures on *congestive fever*, in the first edition of Stokes and Bell's Lectures (1840), we used the following language: "You will give the quinine with the more freedom when you give it as a sedative, or a means, at any rate, if this term sounds exceptionable, of removing entirely the irritation which originated and kept up the paroxysm." "The operation of quinine is not antagonistic to that of bloodletting, nor is it congenial with inflammation." In speaking of dose we remarked: "If we are desirous of making an impression at all decided on the nervous system, and through its sedation of allaying the febrile disturbance of the functions generally, five grains of the sulphate of quinine is the smallest dose which we should think of prescribing for an adult whose idiosyncrasy is not such as to forbid the use of the medicine beyond minute doses."

Since this opinion was advanced in favour of the sedative operation of quinia, farther reflection and observation strengthen our convictions of its accuracy; and some European writers and practitioners are now, like M. Jacquot, distinctly advocating the same view.

In typhoid fever M. Jacquot thinks favourably of quinia; not as a means of arresting the disease, but destroying its diurnal paroxysms, and other epiphenomena which give it an ataxic character, and the removal of which simplifies it to a great extent.

Music for the Million.

In common with some of our medical friends we were invited to be present, one day last month, at an examination in elementary vocal music of the children of the public school in Race above Broad Street. They had only enjoyed the benefits of

quarter's tuition, which consisted in a lesson of half an hour twice a week. The feeling of satisfaction at the progress made by these juveniles, under the direction of their teacher, Mr. Johnson, and at the pleased attention manifested by them during the vocal exercises was, we believe, strong and general among all the visitors.

Of the good effects of singing, as a part of elementary education, there cannot, it seems to us, be any difference of opinion. It is a healthful exercise, by which the voice acquires strength and flexibility, owing to the increased capability of vibration of the vocal cord; and increased resonance, by greater expansion of the lungs and walls of the chest. To a weak pulmonary apparatus, not affected with inflammation or other organic disease, singing affords a means of imparting present strength, and future power to resist minor causes of derangement from any casual strain upon it; analogous to that which regulated gymnastics afford to the general muscular system. Appropriately enough may we designate by the title of vocal gymnastics, the exercises of declamation, recitative and song, and playing on wind instruments: and in this view of the subject we must acknowledge a new proof of the fine perceptions of the Greeks to the relations of the physical and moral faculties of man to each other, when they appended, in their Olympic games, musical contests to the gymnastic ones.

In its moral bearings, as a source of pure pleasure, a recreation from intellectual or bodily toil, an aid to religion, and an incentive to patriotism, vocal music comes to us under the most imposing sanctions. It is recommended both in sacred and profane writ; and by none have its merits, including music in general, been more strenuously insisted on than by those inflexible republicans, Plato in ancient, and Milton in modern times. The Greek philosopher, and legislator for his imaginary republic, represents bodily exercise to be the sister of pure and simple music; and as exercise imparts health to the

body, so music imparts the power of self-government to the soul. In his "Laws," setting out with the proposition, that children, as also, indeed, the young of all animals, are instinctively impelled to various movements of their bodies and their tongues — gambols and cries of various kinds — Plato deduces the propriety of teaching them graceful movements and music.

Milton, in his "*Tractate of Education*," enumerates both vocal and instrumental music among the exercises proper to be introduced into schools, as "recreating and composing the travailed spirits of the scholars, with the solemn and divine harmonies of music, heard or learned;" either deep tones of the organ, or "sometimes the lute or soft organ-stop, waiting on elegant voices, either to religious, moral, or civil duties, which, if wise men and prophets be not extremely out, have a great power over dispositions and manners, and smooth and make them gentle from rustic harshness and distempered passions. The like, also, would not be inexpedient after meat, to assist and cherish nature in her first concoction, and send their minds back to study in good tune and satisfaction."

Coming down to the actual practice of the present day, we meet with a distinct and formal recognition of the importance of singing, as a branch of education for the children of the masses, in fact, of the entire people, in the law enacted by the Prussian government in 1819. Among the provisions for insuring adequate instruction in the elementary or primary schools, "singing" is specially mentioned, "with a view to improve the voices of the children, to elevate their hearts and minds, to perfect and ennoble the popular songs, and church music or psalmody." Equal attention is paid to singing in the normal schools, in which young men are prepared, still at the public expense, to become teachers themselves. Not only is singing taught to them, but also playing on the organ, the violin, and the piano-forte, with a view of forming both the voice and ear.

If, in England, a system of public instruction, including vocal music, be not yet established upon a broad and permanent basis, there is, however, encouragement held out of a marked amelioration of the former state of things in this particular. Governmental approval is, at least, implied in the "Singing School for School Masters, under the Sanction of the National Education Committee," which was opened on the 1st of February, 1841, at Exeter Hall. The direction of the school was confided to Mr. Hullah, who, as we learn, besides having studied the theory of the subject, came to his task with a year's practical experience; he having, for that period, conducted the musical exercises of the Normal School at Battersea, where a class of from thirty to forty boys had made satisfactory progress in the elements of part-singing. It was stated in the prospectus, at the time, that — "The classes will consist entirely of persons engaged in elementary education, either in day-schools, Sunday-schools, or evening-schools; and the course of lessons will be so arranged as not only to impart to the masters who compose the classes such a knowledge of the theory of music as is necessary for the art of singing, but especially to enable them to turn their acquirements to account by teaching in the week-days whatever they may have been taught themselves; or by enabling them to conduct with greater skill the sacred music of the Sunday-school or public worship."

All this evidently looks to a dissemination of vocal music among the people; and in connection with what has been done in Prussia for the children of all classes, can hardly fail to encourage our directors and controllers here at home to complete the measure already begun, and to recognise singing as a part of regular instruction in the public schools. Next to religion there are no greater harmonizing means than music and song, which, as inspiring and furnishing rational amusement to all

ought to be made by the state, as far as its jurisdiction or example goes, accessible to all, and for all. Measured by the standard of utility, that attainment must certainly rank high which, while it gives pleasure to its possessors, enables them to impart pleasure to their parents and other members of their family, which evokes the social principle in its most benign aspect, and which, without fear of the treachery that lurks in the intoxicating bowl, calls up all the kindly and joyous feelings, and develops the finer sensibilities of human nature.

The present period is peculiarly propitious to a formal recognition of the principle which we here advocate. The vicious and eminently morbid excitement imparted by intoxicating drinks is fast yielding to calmness and temperance; but let us not mistake the transition for a state of permanency. Active movements of body and tongue are not more instinctive in the child than in the adult. The senses and the feelings must be interested as well as the intellect. Failing to furnish healthy fountains, diseased ones will be sought after. It becomes, therefore, the duty of instructors and legislators to give the right bias to the children of the republic, to those whose conduct, as adults, will either sustain or mar its greatness.

SOUTH-WESTERN TRAVEL.*

OHIO RIVER, Oct. 16, 1844.

This day will finish my rambles of nearly seven months, in which, by land and water, I have travelled about 6200 miles; and still left large portions of this boundless and beloved West of ours unvisited. I am now on my 29th steamboat, not one of which has been overtaken by any casualty. Indeed, I have come to believe it is safer, in this country, to travel by water than land. All the stage coaches and diligences of Europe and the United States could not, in the same time, transport the number of persons conveyed from place to place, by the boats on the Lakes, the Gulf, and the Mississippi with its tributaries, and still, how few accidents, necessarily involving

* Letter from Dr. Drake to his associates, the Editors of the *Western Journal*.

the lives of passengers, do we hear of! But I have also travelled in skiffs, on railroads, in stages, buggies, common wagons, on horse-back, mule-back, and on foot; by night and by day, without arms, and without having suffered a single aggression, robbery, or theft; which certainly speaks well of the state of society, though it must be confessed, that our country is not without ruffians and robbers, to the production of which our steamboats undoubtedly contribute their full share, by the drinking, gambling, and licentious conversation of too many of their passengers. Still, these sources of corruption to clerks, mates, pilots, engineers, cabin boys, and young passengers, are gradually drying up. Table drinking is almost at end, and those who go to bars, are fewer and shyer than in days of yore. And here I cannot help asking, why the general government, which profess to legislate in various ways, for the safety of passengers, and requires every boat to be registered and licensed, does not prohibit the sale of intoxicating drinks on the whole, and forbid their use to those who manage them, except while in port? Such a prohibition, rigidly carried out, would soon throw the control of them into the hands of men who practise total abstinence, and contribute at least as much to their safety, as the thousands which are expended on the removal of snags and sawyers. That our members of congress do not move in this matter, seems strange, indeed, and should, perhaps, be ascribed to their desire not to be without an occasional 'cock-tail,' when on their way to Washington, after the immense amount of drinking which their getting into office has required. If intoxicating drinks were banished from our boats, those who manage and those who travel on them, might resort to what is far better for health, both of mind and body,—an occasional cup of strong, hot coffee with a cracker, which could be sold at the *Cafe* of the boat, for half the price of the glass of poison, and still afford a good profit to the proprietors.

"In conclusion, I must say, that from all the facts I have been able to collect, steamboat travelling is healthful, especially in reference to autumnal fever. Our boats draw probably average 30 persons each, and in general they are more exempt from intermittent and remittent fevers, than the people who reside on the banks of the rivers which they navigate. The same appeared to me to be the case on the Ohio and Erie canal, when I travelled upon it in 1842."

MEDICAL ETHICS.

DEATH OF THE REV. DR. ARNOLD.

In the very interesting memoir of this distinguished scholar, a most affecting narrative is given of the manner and circumstances of his decease. It is my wish, on this occasion, only to draw attention to the conversation between the patient and his medical friend.

Between 5 and 6 o'clock on Sunday morning, Dr. A. awoke with a sharp pain across his chest. He complained of this to his wife; and mentioned that he had it slightly the preceding day. The pain increased, and seemed to pass from the chest to the left arm, so that a suspicion arose in the mind of Mrs. A. of its being an attack of angina pectoris. His sufferings continued severe, although variable as to the degree; and it was evident from the solemnity of his manner, though habitually a devout man, that he had the impression that his seizure was a perilous one. His medical attendant was sent for. At 1 to 7, Dr. B.— (son of the usual medical attendant) entered the room. Dr. A. was then lying on his back; his countenance much as usual. His pulse, though regular, was very quick, and there was cold perspiration on the brow and cheeks; but his tone was cheerful. "How is your father?" he asked, on the physician's entrance: "I am sorry to disturb you so early; I knew that your father was unwell, and that you had enough to do." He described the pain, speaking of it as having been very severe, and then said, "What is it?" While the physician was pausing for a moment before he replied, the pain returned, and remedies were applied till it passed away. He asked again, what it was? and was answered, that it was a spasm of the heart. He exclaimed, in his usual manner of recognition, "Ha!" and then, on being asked, "If he had ever in his life fainted?" "No, never."—If he had ever had difficulty of breathing?" "No, never."—"If he had ever had sharp pain in the chest?" "No, never."—"If any of the family had ever had disease of the chest?" "Yes, my father had; he died of it."—"What age was he?" "Fifty-three."—"Was it suddenly fatal?" "Yes, suddenly fatal."—He then asked, "If disease of the heart were a common disease?" "Not very common."—"Where do we find it most?" "In large towns, I think."—"Why?" (Two or three causes mentioned.) "Is it generally fatal?" "Yes, I am afraid it is." The physician now left the room to obtain remedies, and on his return they were

applied. There was a slight return of the spasms, after which Dr. A. said, "If the pain is again as severe as it was before you came, I do not know how I can bear it." He then fixed his eyes upon the physician, who rather felt than saw them upon him, so as to make it impossible not to answer the exact truth; repeated one or two of the former questions about the cause of the disease, and ended with asking, "Is it likely to return?" and on being told that it was—"Is it generally suddenly fatal?" "Generally." On being asked whether he had any pain? he replied that he had none, but from the mustard plaster on his chest; with a remark on the severity of the spasms in comparison with this outward pain; and then, a few moments afterwards, inquired what medicine was to be given;—and on being told, answered, "Ah! very well!"—The physician, who was dropping the laudanum into a glass, turned round and saw him looking quite calm, but with his eyes shut. In another minute he heard a rattle in the throat, a convulsive struggle,—and animation ceased.

It is very far from my wish to impugn the conduct of Dr. Arnold's medical friend on this great emergency. He might have been a man whom no evasion would satisfy; and direct falsehood never can be justified. I am very far from sanctioning that false delicacy which governs many practitioners in their intercourse with the sick, and by which the peril of the case may be known to the family and friends, but not to the patient, though to him the knowledge is very important, that he may arrange his temporal affairs, and all-important, that he may prepare for eternity. Nevertheless, it appears to me that it would be very sad if the proceedings in the case before us were drawn into a precedent. The symptoms of angina pectoris are so evident, that very few questions are requisite at the moment, and information at all likely to agitate should be sought from friends. Without any previous intimation, who can tell, in a first seizure, whether or not it is a case of functional disturbance, not one arising from ossification of coronaries, or degeneration of muscular structure? but in either case, *under the paroxysm*, the mind should be kept as undisturbed as possible. Patients usually attach much importance to *spasm*. I do not see the propriety of telling a patient, at the time, that he had *spasm* of the heart, and not that there was "some disturbed action." I cannot see, in such a case, and at such a moment, that it would be requisite to draw from the lips of a patient informa-

tion as to hereditary tendency, or to tell him that these seizures were usually suddenly fatal. I would rather direct thought to the other side; assure the patient that these attacks, though serious, were often unconnected with organic disease—functional disturbances, frequently recovered from, and sometimes confined to a single seizure. The emotion of a really good man (and there is no question of the piety of Dr. Arnold), when suddenly called to view himself as a dying man—about to depart from his beloved family, about to be severed from things deeply interesting him, his mind taking a rapid and wide glance at the consequences of his dissolution—is already such as to perturb the soundest heart. How greatly must that emotion perplex the movements of an organ previously so disordered or diseased, as to have placed life in the most imminent jeopardy? It is not difficult to regulate phraseology, that a calming persuasive tenderness shall be combined with fidelity; but in the report, quoted from the memoir, it seems to me that there is a bluntness which fidelity does not require.

W. COOKE.

39, Trinity Square,
Sept. 24, 1844.

Med. Gaz.

BIBLIOGRAPHY.

Harrison's Materia Medica and Therapeutics.*

We hail, with no little pleasure, the appearance of a volume from a tramontane city, which, at the beginning of the present century, did not contain as many inhabitants as this does pages. But it is not simply the publication of a scientific work that furnishes matter for gratulation, so much as the fact of its being a good one, and in good dress—reputable alike to author and publishers.

Dr. Harrison has been a successful and approved teacher of Materia Medica and Therapeutics for several years in the Medical College of Ohio, and by his connexion with the Cincinnati Hospital, he has enjoyed desirable

* Elements of Materia Medica and Therapeutics. By John P. Harrison, M.D., Professor of Materia Medica and Therapeutics in the Medical College of Ohio. Vol. I. Cincinnati: Deliver & Burr, 1845. pp. 406.

opportunities for testing the remedial value of medicines, as well as of various therapeutical courses. The materials thus accumulated are now brought out and arranged after a system of his own, and their actual and relative efficacy set forth with copiousness of diction, and in a style which, if somewhat redundant, commands attention and interest, and is, on the whole, to our taste, preferable to that of a barrister's brief, which is of late becoming the fashion.

Dr. Harrison, in his view of the *modus operandi* of medicines, contends stoutly for the doctrine of the solidists; and might seem to challenge to farther combat those who, like ourselves, differ from him on this subject. But our feelings of respect for the devotion to a once popular creed, now sunk into disrepute, if not actually subjected to evil report, predominate over any desire to cry out with the victors, just as one almost instinctively makes the lowest bow, with hat raised, to the faithful follower of a fallen and exiled monarch, when the courtier, decorated with all the insignia of office, and proudly erect from consciousness of place and power, would barely receive a constrained salute.

The second chapter treats of the *effects of remedies*; the third of the *classification of medicines*. These are divided into six classes, viz.: *Alterants, Evacuants, Incitants or Excitants, Secretants, Narcotics*, also *Anodynes*, and *Derivatives or Revulsives*; with each its sub-divisions or orders. The author confidently believes that some advancement is made, by such an arrangement, in achieving a comprehensive and accurate scheme of classification. We would add, that if he should find his scheme abundantly criticised, he must console himself with the reflection that a similar fate has attended all efforts to classify either diseases or the agents for their removal; and that it is much easier to point out defects than to amend, to pull down than to build.

In the fourth chapter *the circum-*

stances which modify our therapeutical indications are presented with clearness and effect. This is followed by one on the *theory and art of prescribing*, in which the author points out the principles that should govern the prescriber, and, in so doing, he animadverts on the polypharmacy, and "a too zealous and eager spirit of multiplying dose upon dose, even when done with a precise, accurate, and clear view of diagnosis." He remarks: "In our country, especially in the West, there is a prevalent disposition to do too much, particularly in chronic cases, by the employment of heroic remedies." The following example of this evil would hardly obtain credence coming from a less authentic source.

"Several years ago we saw a gentleman in consultation, living in the country, whose case demanded the use of tonics. The following articles were given him by the attending physician — all of them to be taken in quick succession within twenty-four hours: three doses of quinine; oxide of bismuth three times a day; nitric acid, six drops, three times a day; a table-spoonful of yeast once a day; and wine occasionally. Besides, he was ordered a mixture of hartshorne and ether, whenever a sense of weakness came over him, and morphine and assafoetida were given at night. Additional to all this medication he was using the nitro-muriatic bath. All these rapidly recurring pills, powders, and drops, were separately administered — and to what end? Why, said his physician, he is very weak, and must be propped up by tonics."

When speaking of combination, the author observes, and correctly too, that "American physicians generally err on the side of excessive simplicity in their prescriptions." Various formulæ, under appropriate heads, are introduced, both to enlighten the student in prescribing, and to furnish the practitioner with active and available combinations for the leading exigencies of the case before him. A *posological table*, a *synopsis of incompatible substances*, and a *synoptical table of poisons and their antidotes*, constitute the subjects of three successive chapters. *Patent medicines and nostrums, alphabetically arranged*, with the composition of each, furnish the matter of another chapter.

The Indications of Cure in Diseases

is an important theme, rightly conceived and well-handled by the author, who justly remarks, that "in order to the establishment of correct indications of cure in disease, the mind of the practitioner must be enlightened by a thorough and well-digested knowledge of pathology." Reference is made to the recuperative energies of nature, and to the degree in which reliance can be placed on her efforts in the cure of disease; to the relative meaning of symptom and sign, and to physical signs; and next, inquiry is instituted to determine the actual disease, and to apply the appropriate means for its removal. The indications of cure in disease established by the author, are, "1st. The promotion of healthy secretions; 2d. The derivation of action; 3d. Reduction of the activity of the powers of life; 4th. The invigoration of the vital energies; 5th. The alteration of capillary action; and 6th. The subdual or mitigation of pain and irritability." The fifth of these indications, if it does not imply, is at least a necessary prelude to the first and third.

In chapter tenth, Dr. Harrison begins, under the head of *alterants*, to unfold his views of therapeutics, in the which, although we may not always coincide, we meet with many instructive precepts, calculated to give the student a good insight into the whole subject, and to store his mind with available knowledge for his after guidance in prescribing at the bedside of his patient. Coming to the *particular alterants*, his remarks on the therapeutical operation and remedial effects of mercury are more full and connected, and given in a safer spirit, to the avoidance of the extreme rashness of American practice and of timidity of continental European practice in the use of mercury than we have met with in the same compass. *Mercurial diseases* are treated at some length, and in a manner that cannot but be serviceable, as a warning to deter many of the physicians of the south and west from the still prodigal exhibition of mercury. Iodine and arsenic are, also, examined in

their therapeutical relations with commendable diligence and discernment.

The volume closes with chapter twelfth on *Evacuants*, in which the reader will find the subject examined in its most important relations,—its abuses and due application being elucidated in quite a satisfactory manner.

In conclusion, we believe that the volume of Dr. Harrison is well adapted to the end which he proposed—utility; and that students, whether east or west of the mountains, will find their interest as well as pleasure in its careful perusal. We look forward with much satisfaction to the appearance of the second volume.

Cooper on the Testis and Thymus Gland.*

In one large volume (royal octavo) the American publishers have sent out the two classical works of Sir Astley Cooper on the Testis and the Thymus Gland. Both of them afford evidences of patient observation and careful anatomical investigation, and are, in this way, examples to future inquirers, besides furnishing direct and valuable information to the pathologist and surgeon. If variety be desired for the eye as it is for the mind, it will be quite a pleasant change, after laying down some cheap (?) volume, to take up the present one, with its fine large type and ample margin. One feels as if in knightly company, discoursing with the author himself, in his happier mood of gentle address and bland speech, set off with a fine person and face, and an occasional movement of the hand as if to exhibit a brilliant one of his fingers.

The engravings are numerous, and although not coloured, they still serve to illustrate more fully the meaning of

* Observations on the Structure and Diseases of the Testis. With Numerous Plates. By Sir Astley Cooper, Bart., F.R.S., &c. From the Second London Edition. Edited by Bransby Cooper, F.R.S., &c. Philadelphia: Lea & Blanchard, 1845. pp. 247, large 8vo. The Anatomy of the Thymus Gland. With Numerous Plates. By Sir Astley Cooper, Bart., F.R.S., &c. Philadelphia: Lea & Blanchard, 1845. pp. 37, large 8vo.

the text: Those of the thymus gland have just now additional interest to the profession at large, from the alleged connection between enlargements of this body and laryngismus stridula, or thymic asthma.

Taylor's Medical Jurisprudence.*

The work of Mr. Taylor comes to us, heralded with notes of praise from the other side of the Atlantic, for its complete bearings on the topics which may be supposed to interest a medical jurist. Its claims to our confidence in the United States are strengthened by the notes and additions of Dr. Griffith; which, as might be expected from the direction of his studies to the subject and his large accumulation of materials, are good and to the purpose.

That in Great Britain as in this country medical jurisprudence does not command, as it ought, an attentive study, on the part of our profession, is evident from the concluding paragraph of the author's preface, which, from its conveying a salutary hint if not direct lesson, we subjoin for the benefit of our friends at home: "Some medical practitioners are disposed to treat medico-legal inquiries with indifference. They are apt to think, that cases are rare; and that they may easily escape any grave responsibility, when they occur. I have never known this indifference manifested by one, who had once been summoned as a medical witness to a court of law; and as to the rare occurrence of cases, I may perhaps be permitted to make the following remarks. From some recent Parliamentary returns, it appears that in one year in the United Kingdom, there were twelve hundred and thirteen trials, involving questions of murder and manslaughter, either perpetrated or attempted from poisoning and wounding alone, in every one

of which medical evidence was necessary, and, in the majority, indispensable to conviction. In two years, there were five hundred and fifty-one deaths from poison in England and Wales alone, in the greater number of which medical evidence was absolutely required. This is exclusive of criminal attempts at poisoning not followed by death. I omit all references to medical evidence in civil cases; because these are comparatively rare, but nevertheless the above facts will show that a practitioner must not too confidently rely upon the chance of escaping duties which may reflect upon him the greatest public honour or disgrace, according to the manner in which they are performed."

Mr. Taylor remarks that, as *poisoning*, *wounds*, and *infanticide*, constitute more than three-fourths of those cases which require the aid of a medical jurist in a court of law, these have been treated at a length commensurate with their importance.

The zealous advocate of a temperance which shall consist in an entire abstinence from intoxicating or alcoholic liquors, will not find in the chapter on poisoning by narcotic irritant poisons, of which alcohol is one, any corroboration of a position assumed by some medical men among us, that the stomach of a drunkard exhibits peculiar and distinctive marks of disease induced by a habit of alcoholic potation. The position is not sustained nor sustainable by either toxicology or pathology. The *post-mortem* appearances of the mucous membrane of the stomach after acute poisoning from the ingestion of alcohol, indicated by the terms, "in one case of a light red, and in another of a dark red-brown colour," are not distinctive from appearances induced by other poisons. Still less can chronic poisoning by alcohol be predicated of any combination of appearances, as respects colour or texture in the stomach of a drunkard. No toxicologist would risk his reputation by positively affirming that a person was destroyed by arsenic, although he were to see the condition

* Medical Jurisprudence. By Alfred S. Taylor, Lecturer on Medical Jurisprudence and Chemistry, in Guy's Hospital, &c., &c. Edited, with notes and additions, by R. Egglefield Griffith, M.D., &c. Philadelphia, Lea & Blanchard. 1845. pp. 539, 8vo.

of stomach and intestines so often, but still not exclusively, left by the introduction of this poison into the system. He could not forget the fact, moreover, that death has sometimes ensued as an unquestionable effect of arsenic taken into the stomach, without any, or at the most with only very trivial marks of lesion. Of prussic acid it must be said that the morbid appearances are very slight and imperfect. With these and other facts, of a similar nature in toxicology before us, we ought not, if we are either guided by analogy or invoke direct demonstration, to foster the idea that we can picture the stomach of a drunkard in such colours and hues as to allow of our saying that it is a specific likeness. Other proofs of alcoholic poisoning, by habits of drunkenness and of drinking distilled and fermented liquors, are furnished with adequate cogency by pathology, and the adverse nature of such habits to health are set forth forcibly enough by sound hygiene, to render it quite unnecessary, for all the purposes of dissuasion and warning, to enlist doubtful facts and strained arguments from toxicology in favour of temperance.

With all the industry and learning that may be manifested by a toxicological writer, he soon discovers that his records and statements are hardly sent to the world before new facts and modifications are discovered which must alter the manner of presenting some of the most important questions in the science. The best work extant on Toxicology, that by Dr. Christison, would require an entire revision of the chapter on arsenic, for example, both as regards its tests and its antidote, the latter of which was not known when the last edition of his work was published. So, also, recent as is the appearance of Mr. Taylor's volume, we find probable cause for an addition to his remarks on prussic acid, when he says: "There is no known antidote to this medicine." In one of the late English journals (*Lancet*) we find it stated, as the results of experiments by Messrs Smith, that prus-

sic (hydrocyanic) acid may be neutralized by a proper preparation of a sulphate of iron, consisting of four proportions of the persulphate and three of the protosulphate, combined with the proper proportion of an alkaline carbonate. The resulting compound is the insoluble prussian blue.

Copious as are the details of the tests of arsenic in the volume before us, one of the most valuable, the copper one, was not known to Mr. Taylor at the time, and although subsequently described by this gentleman very fully in the *Brit. and For. Med. Rev.*, for July, 1843, it does not seem to have adequately attracted the notice of the editor, Dr. Griffith, who merely refers to it, but in terms underrating its great importance. In the Bulletin for 1843, at pages 306, 375 and 409, our readers were made acquainted with Mr. Taylor's, Dr. Bevan's, and Dr. Christison's observations and experiments confirmatory of the value of the copper test of *Reinsch*. As a positive test, copper is open to some of the objections that apply to even Marsh's or the sulphuretted hydrogen test; but as Dr. Christison justly remarks, *Reinsch's* process is of far greater value than if it had merely presented a new test for arsenic. It constitutes the easiest and most secure mode of so separating arsenic from complex mixtures as to enable experimentalists to apply to the metal any of the tests for arsenic already known. It is, also, an exceedingly delicate test, for it will detect a 250,000th part of arsenic in a fluid, and it does not leave any arsenic in the subject of analysis, which can be detected by any other means, even by the delicate process of Mr. Marsh.

The modest title of Manual, given to this work by its author in the English edition, must preclude complaints against any want of fulness of investigation on certain subjects, which, to the critic or reader, may seem to demand a larger share of attention than they have received in this volume. In the multiplied relations of insanity to medical jurisprudence, it was impossible for Mr. Taylor, in his narrow limits

twenty-six pages, to do more than exhibit the more prominent points merely. Of the scope which an author may take, evidence is given in a work now before us, in three volumes, devoted to the consideration of Insanity viewed in its Relations to Medico-Judicial Questions, by the eminent Marc—(*De la Folie Considérée dans ses Rapports avec les Questions Medico-Judiciaires*, Par C. H. Marc, Tomes 3. Paris, 1840. This work is a mine for the industrious student and critic. Nor must we overlook, in this connection, the classical work of our countryman, Dr. Ray, *The Medical Jurisprudence of Insanity*.

Under the head of *Responsibility of the Insane for Civil and Criminal Acts*, Mr. Taylor makes some very judicious observations, which we shall insert here, as being quite as applicable to the prevailing sentiments and practice in the United States as in England. The immediate text is the trial and acquittal of M'Naughten for killing Mr. Drummond:

"If we except the case of Oxford, tried for shooting at the Queen, there is perhaps no case on record in English jurisprudence where the facts in support of the plea of insanity were so slight; and when the cases of Bellingham, Lees and Cooper, are considered, the two latter tried and executed within the last few years, it must be evident that there is both uncertainty and injustice in the operation of our criminal law. Either some individuals are most improperly acquitted on the plea of insanity, or others are most unjustly executed. If the punishment of death were abolished there is no doubt that less would be heard of this plea, but, in the meantime it is unfortunate that there is no other way of evading capital punishment, than by making it appear that the criminal was insane. (See Prichard, 399.) It is on this point that medical witnesses seem to me to lose sight of their true position. In giving an opinion of the mental condition of an offender, it is no part of their province to model that opinion according to the punishment which may follow if the plea be rejected; but according to the facts of the case. The legislature only is responsible for the punishment adjudged to crimes. One great evil is, that, under this system, the law operates most unequally. One case becomes a subject of prominent public interest, and every exertion is made

to construe the most trivial points of character into proofs of insanity; an acquittal follows. Another case tried at the assizes, may excite no interest,—it is left to itself,—the accused is convicted, and either executed or otherwise punished; although the evidence of insanity, had it been as carefully sought for and brought out, would have been as strong in this as in the former instance. That this kind of defence is being carried too far, will be apparent from the observation of Mr. Baron Gurney, in the case of the King v. Reynolds, where the judge said that "the defence of insanity had lately grown to a fearful height, and the security of the public required that it should be watched." So, also, Mr. Justice Coltman, in the case of the Queen v. Weyman, remarked, that "the defence of insanity was one which was to be watched with considerable strictness, because it was not any slight deviation from the conduct which a rational man would pursue under a given state of circumstances, which would support such a line of defence." When the punishment attached to an offence is not capital, it would appear that much stronger evidence is required to establish a plea of insanity than under other circumstances. This will be seen by reference to the case of the Queen v. Grove, Stafford Lent Assizes, 1843. The evidence of insanity was considerably stronger than that adduced in the case of M'Naughten, yet the prisoner was convicted. These two cases occurring so recently, the one after the other, display the uncertainty attendant upon a plea of this kind. So again it would be difficult to reconcile upon medical grounds, the acquittal of Francis with the conviction of Oxford, both of them tried for the same crime (shooting at the Queen), committed under similar circumstances. In the case of the Queen v. Stolzer (Central Criminal Court, Oct., 1843), where the charge was one of murder by stabbing, the plea of insanity was rejected, although no motive appeared, and there were some indications of insanity. In another case (the Queen v. Rowe), tried at the same time, the prisoner, an old man, deliberately fired a loaded pistol at his master, because he had discharged him from his service and would not take him back. There was no mark of insanity either in the act or in his previous conduct, but he was acquitted as insane, on the lenient presumption that he might be labouring under the imbecility of age. These decisions clearly show, that every case will be determined, not by medical rules or opinions, but by the peculiar circumstances which accompany it."

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ON
INFLAMMATION
AS A PROCESS OF
ABNORMAL NUTRITION.

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(Continued from page 13.)

IV. THE EARLY PHENOMENA OF
INFLAMMATION.

Numerous researches and experiments have determined that the phenomena of inflammation, as observed under the microscope, take place in the following order. 1st, The capillary vessels are narrowed, and the blood flows through them with greater rapidity. 2d, The same vessels become enlarged, and the current of blood is slower, although even. 3d, The flow of blood becomes irregular, it oscillates, that is, goes forwards and backwards, and sometimes stops for a period, and then resumes its course. 4th, All motion of the blood ceases, and the vessel appears fully distended. 5th, and lastly, the blood is either effused by rupture into the surrounding tissues, or the *liquor sanguinis* is exuded without rupture. These different phenomena produce the more evident appearances of redness, heat, pain, and swelling.

The first step in the process, viz., narrowing of the capillaries, is readily demonstrated on the addition of acetic

acid to the web of the frog's foot. If the acid be weak, the phenomena occur more slowly and gradually. If it be very concentrated, the phenomenon is not observed, or it passes so quickly into complete stoppage of blood, as to be imperceptible. Although we cannot see these changes in man under the microscope, certain appearances indicate that the same phenomena occur. The operations of the mind, for instance, as fear and fright, and the application of cold, produce paleness of the skin; an effect which can only arise from contraction of the capillaries, and a diminution of the quantity of blood they contain. In the majority of instances, also, this paleness is succeeded by increased redness, the same result as follows from direct experiment on the web of the frog's foot, constituting the second step of the process. This depends on the enlargement of the capillaries and the greater quantity of blood they contain.

The variation in the size of, and amount of blood in the capillaries is conjoined with changes in the movement of that fluid. Whilst the vessels are contracted the blood may be seen to be flowing with increased velocity. Indeed, so far as my observations go, the increased swiftness of the blood is the principal proof of diminution in the calibre of the vessel. After a time, the blood flows more and more slowly, without, however, the vessel being obstructed; it then oscillates, that is, moves forwards and backwards, or makes a pause, evidently synchronous with the ventricular diastole of the heart. At length the vessel appears

quite distended with yellow corpuscles, and all movement ceases.

Again, these changes in the movement of the blood induce variations in the relation which the blood corpuscles bear to each other, and to the walls of the vessel. In the natural circulation of the frog's foot, the yellow corpuscle may be seen rolling forward in the centre of the tube, whilst on each side a clear space is left, only filled with *liquor sanguinis*, and a few lymph corpuscles. There are evidently two currents, the centre one very rapid, that at the sides (in the lymph spaces, as they are called) very slow. The yellow corpuscles are hurried forward in the first occasionally mixed with some lymph corpuscles. These latter, however, may frequently be seen clinging to the sides of the vessel, or slowly proceeding a short distance down the tube in the lymph space, and then again stopping. Occasionally they get into the central torrent, when they start off with great velocity and accompany the yellow corpuscles. When the capillaries enlarge, however, the central column may be seen to enlarge also, and gradually approach the sides of the tube, thus encroaching on the lymph spaces. The slower the motion of the blood, the closer they come, until at length they reach the sides of the vessel, and become compressed and changed in form; the vessel now is completely distended with yellow corpuscles, the original form of which can no longer be discovered. Thus congestion is occasioned.

If the morbid process continue the vessel may burst, causing hemorrhage, or the serum and *liquor sanguinis* become effused into the surrounding textures. The exudation of the latter constitutes the essential phenomenon of inflammation. Before, however, proceeding to a consideration of this, let us inquire into the supposed causes of the previous phenomena, or what is usually denominated the *theory of inflammation*.

The whole of this subject has been

rendered exceedingly complex and difficult, not only from the numerous theories advanced, but from the many false facts by which some of these have been supported. Within the last few years, also, such great advance has been made in our knowledge of the minute structure of different organs, of the functions they perform, and of the operations of the nervous system by reflex action, that a review of the whole seems necessary. Such is my object with respect to this part of the subject, and I need only premise that it is not so much novelty, as condensation and clearness, which will be kept in view. In the account to be given I shall in a great measure follow the views of Alison and Vogel, more especially of the latter.

The first abnormal change in inflammation discoverable by the microscope is without doubt contraction of the capillaries, whilst the blood flows through them more rapidly. Here the following reflections, naturally arise. The diminution in the calibre of the capillaries must be caused either by the contractility of their walls primarily, or by the contraction of the parenchyma which surrounds them. In the latter case they would be narrowed secondarily.

Now it is difficult from observation to separate with precision one of these processes from the other. The walls of the capillaries are so intimately connected with the surrounding parenchyma, that it will be evident contraction of the capillaries must necessarily draw the parenchyma after it, and, on the other hand, contraction of the parenchyma must occasion diminution of the calibre of the capillaries.

An observation of what occurs in lax parts, where the parenchyma and vessels are not so intimately connected, as in the vessels of the mesentery, supports the view of inherent contractions in the capillaries. At least it cannot readily be understood how, in a membrane so delicate, where the parenchyma is so loose, its being primarily affected, can produce the regular con-

tractions observed in the vessels. This view is strengthened if the ultimate structure of the capillaries be really identical with that of non-voluntary muscle found in other tissues, as previously stated. This would readily explain the well known fact of the capillaries being more contractile than any other portion of the vascular system,—a circumstance otherwise certainly very mysterious.

On the other hand, many observations support the view that diminution in the calibre of the capillaries depends upon contraction of the parenchyma or structures which surround them. For instance, the corrugation of the skin, the so-called *cutis anserina*, from the application of cold. Here evidently not only are the capillaries contracted, as is proved from the paleness of the skin, but also the elementary fibres of the skin itself, which, by their pressure on the hair bulbs, may occasion this phenomenon. Here we cannot suppose that contraction of the capillaries alone would be sufficient to drag mechanically the primitive filaments of the parenchyma, which so curiously interlace the hair bulbs. Every one who has microscopically examined the skin, and convinced himself of its great elasticity, will certainly share this opinion.

Very probably, then, both causes may act sometimes separately, sometimes together, and we may state that “diminution in the size of the capillaries follows either from an inherent contraction of their walls, or secondarily, as the result of contraction in the parenchyma of an organ, or lastly, from both these causes together.”

The next question that arises, is, how are these effects in their turn produced? In reply, the following reflections suggest themselves.

The causes producing the contraction of the capillaries, whether acting upon the vessels themselves or upon the surrounding parenchyma, operate either directly or indirectly. If directly upon the tissues, they may be purely mechanical, purely chemical, or purely

vital. If indirectly, it is through the medium of the nervous system, and thus the causes may act directly by means of the peripheral nerves, or indirectly, that is, by reflex action. Let us now examine how far facts indicate which of these views is correct.

We observe paleness or contraction of the capillaries to be caused in man by purely mental causes, such as anger, disgust, fear, or anxiety. In such cases a local operation of the causes on the nerves of the periphery, or on the vascular walls of the parenchyma, is not to be thought of. The cause here evidently originates in the nervous centres, and acts secondarily on the nerves distributed to the vascular walls or parenchyma. It must also be evident that the change thus occasioned must be in its nature *vital*.

But the same effect is produced by the topical application of cold and reagents, such as vinegar, or by friction. Either of these can produce paleness of the skin. Here, then, if any effect be produced on the peripheral nerves it is not reflex but direct.

But it may be contended that the effect so occasioned is of a chemical or mechanical nature. But observation tells us that the contraction is followed by dilatation. Now it is impossible that the same stimulus, if it act by physical laws, should produce two opposite results, first contraction and then dilatation. Thus, then, we are necessarily led to the conclusion, that the contraction of the capillary vessels preceding inflammation is in its nature *always vital*.

With the contraction of the capillaries we have seen that there is also a more rapid current of blood through the vessels affected. This may be explained on the hydraulic principle, that when a certain quantity of fluid, is driven forward with a certain force through a tube, and the tube is narrowed while the propelling force remains the same, the fluid must necessarily flow quicker. The value of this explanation, however, is lessened on

regarding the collateral circulation. The resistance to the flow of blood in the narrowed vessels will, according to physical laws, be so much the more the greater the swiftness and the narrower the tubes. But those capillaries which are not affected, as they offer less resistance than those which are, must proportionally receive more blood than formerly, whereby necessarily the swiftness of the current of blood in the surrounding vessels must be diminished. The influence thus produced, however, cannot be estimated, and we are therefore compelled to conclude that the increased swiftness of the current of blood in the contracted capillaries is the physical result of a narrowing of their calibres.

We have now to inquire what are the causes producing enlargement of the capillaries, and a slower movement of the blood in them — constituting congestion.

It is a widely spread opinion, that in congestion the affected parts have more blood conducted to them than natural. But this view cannot be supported by direct observation, which only warrants our stating that the affected parts *holds* more blood than usual, not that an increased quantity of this fluid passes through a given part in the same space of time. On the contrary observation tells us that the blood in enlarged capillaries flows slower than natural, and thus opposes rather than favours the hypothesis of determination.

It is true, however, that the pulse of arteries leading to inflamed parts is fuller and stronger than natural, and that it must consequently receive and transmit more blood than in a normal state. But observation at the same time shows that the increased beating of particular arteries does not in general precede the congestion, but follows it. Although, therefore, this increased arterial action may keep up and augment a congestion once formed, it cannot be considered as its first cause. This phenomenon, which has been

considered the proof of increased determination, is most probably then a propagation of the state of the capillaries to the arteries — is secondary and not primary.

That dilatation as well as contraction of the capillaries depend upon their possessing an innate vital action, may be proved by nearly the same arguments. For instance, it may be caused by mental emotions, as shame, joy, anger, and the like, and may, therefore, under certain circumstances, be dependent on the nervous centres. It may also be produced by the topical application of heat, friction, and chemical stimulants. That these act, however, on the vital properties of the tissues and not physically, is proved by the paleness and vascular contraction they first occasion. Here, again, as no physical cause by its continued operation can produce two opposite effects, the phenomenon must be vital. It may therefore be said, that "the dilatation of the capillaries in congestion is an innate vital action of these vessels, resulting from causes acting upon the nervous system, either direct on the peripheral nerves, or indirect from the nervous centres — possibly also, upon a direct operation of the cause upon the vascular walls." (Vogel.)

The slow movement of the blood in congestion is explained by the same physical law as is applicable to its increased rapidity. For the same reasons that, when the calibre of the vessel is diminished, the current is quick, so when it is enlarged the current must be slow. In the same manner also, the collateral circulation and the increased determination in the neighbouring arteries which subsequently arises can only allow the physical cause to operate to a certain extent. Other influences come into operation which affect its movement, as we shall immediately see.

Now, if we compare the narrowing and dilatation of the capillaries with the phenomena occurring in muscular parts, we need not wonder that Gullen

and others should have dwelt so much upon the doctrine of spasm of the extreme vessels. In muscles we see relaxation taking place as a natural result of spasm, and what occurs in the capillaries is identically the same. Moreover, the action in both cases is produced by similar causes, that is, may depend upon local irritation, or reflex action through the medium of the nervous centres.

It may be said, therefore, that congestion is owing, first, to the operation of a diseased cause, producing transient spasm, then relaxation or paralysis of the capillaries. In many cases, however, the spasm soon passes off, or is entirely wanting, and relaxation or paralysis appears at once. In this way all the phenomena of congestion are readily explained, the increased determination of blood consisting only in the propagation of the relaxation to the arteries.

The next series of changes which require explanation consists of the oscillation in the column of blood, the encroachment on the lymph spaces, complete repletion of the vessel, with blood globules, and lastly, total cessation of all movement.

It is very difficult to determine the cause of oscillation in the column of blood. It may be remarked, however, that this phenomenon has only been observed in the smaller animals, which are held fast under the microscope. Even here the oscillation is not invariably seen to precede the stoppage. It is most frequently observed, also, when the animal is very weak, or has fallen into asphyxia. Under such circumstances the energy of the heart and large vessels is evidently diminished, and the blood will be propelled with less force than usual against the capillaries, and either stop for a moment, or flow backwards during the diastole of the heart. It is probable, therefore, that the oscillation does not essentially belong to inflammation, but rather depends upon the general weakness of the animal. This opinion is strengthened by a fact I have frequently observed,

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viz., that, if whilst examining the circulation in the web of the frog's foot, the animal struggle violently, the motion of the blood is arrested. As the animal recovers from the exertion, the circulation is again gradually re-established, the column first oscillating, and then running in a continuous stream. This is more apparent if the subject of experiment be young.

Let us now inquire the cause of stoppage of the blood. It is of great importance that this should be determined correctly.

We have seen that dilatation of the capillaries can only explain the retarded movement of the blood by physical laws. Dilatation of these vessels alone cannot, without the operation of other causes, produce stoppage, for should the tone of the arteries be lost, yet the heart and large trunks would still possess sufficient power to carry on the circulation. Besides, we have seen that the relaxed arteries in the neighbourhood of the affected part receive and conduct more blood than usual; a circumstance which should prevent retardation of the current did it depend merely on physical laws. Hence, it cannot be conceived how simple dilatation of the capillaries can induce a stoppage of the blood.

This effect has been attributed to obstruction. In a dilated capillary it is possible that there, where only one blood corpuscle passed, now more, two or three abreast may pass; that these, by pressure, may receive a flattened form, and thus become wedged together, so as to occasion in the current of blood a mechanical obstruction which, once produced, may extend further. This mode of explanation, however, is opposed to observation; for, 1st, The stoppage of blood does not, as is supposed, proceed from one point; it takes place over a portion of the capillary system more or less extensive at the same time; 2d, The lymph space near the walls of the capillaries is still evident when the blood moves slowly, and only disappears after the stoppage has taken place.

Now, did obstruction arise from wedging of the blood corpuscles, it ought to be the reverse.*

We cannot, then, attribute the stoppage to this mechanical cause. No doubt, however, when once produced it may tend to keep up the obstruction. It then becomes passive, and resembles mechanical and other forms of obstruction by simple pressure.

Again, the stoppage has been attributed to an impediment to the return of the venous blood. But such an opinion is also opposed to observation; for 1st, veins which come from inflamed parts allow, as far as can be ascertained, the same quantity of blood to pass as usual; 2d, the venous ends of the capillaries and smaller veins are rather widened than narrowed in inflamed parts, and it is not to be conceived what circumstance should impede the backward flow of the blood in those vessels; 3d, observation shows that, when a true stoppage takes place from impediment in the veins, the phenomena are quite different from those in inflammatory obstruction. For instance, when abdominal tumours press upon and obstruct the large venous trunks, we may certainly have effusions of serum, constituting oedema; but none of the phenomena of inflammation. Thus, then, the cause of stoppage cannot be sought for in the veins.

Now, as it has been shown that the power which retains the blood does not consist in material impediments, there only remains to be advanced, that the phenomenon is vital, depending upon

an increased attraction between the blood and the surrounding parts.

This increased attraction can only originate in a change of the vital force. 1, of the blood; 2, of the surrounding parts; and 3, of both these elements together.

It may be objected to the view which places the change of vital force in the blood, that, if this be the cause of stoppage, why should not the effect be more universal? Again, if the blood in inflammation be always affected so as to cause stoppage in the capillaries of a part, then we must suppose that the whole mass of blood is influenced by the smallest wound, such as that made by a razor for instance, which would be eminently absurd. We are not warranted, therefore, in ascribing the cause of stoppage to the blood alone, and although changes do occur in its chemical constitution, facts prove that this is often confined to a very limited portion.

In the same manner it may be shown that although, as we have seen, the vital properties of the parenchyma are undoubtedly affected in inflammation, the cause of stoppage cannot be exclusively attributed to the attraction it may be supposed to exert. Let us remember the researches of Andral, Gavarret, and Simon, who have shown that in acute rheumatism and pleurisy, for instance, the blood contains an increased quantity of fibrin. Now, when we consider with what facility in acute rheumatism inflammation in the different joints is occasioned from very trifling causes, we are certainly warranted in ascribing a portion of the morbid influence to the blood. The same holds in every case where we seek the cause of inflammation, as has been done for a long time in what is called an inflammatory diathesis.

We are, therefore, compelled to conclude, that the most satisfactory theory which can be advanced explanatory of the facts we have described, is one which conceives the existence of an increased mutual attraction between the

* Whilst these pages are going through the press, I have seen the "Principles of Medicine," just published by Professor Williams of London. I find that he confirms the observation of Mr. Addison, viz., that the number of lymph corpuscles may be increased within the vessels of the frog's web by irritation. He conceives that these corpuscles, assisted by diminished elasticity of the vascular walls, produce the obstruction (p. 214, par. 419). Without denying the occasional accumulation of these lymph corpuscles in certain vessels, I must record my conviction that inflammation, accompanied by complete obstruction, may be frequently occasioned independent of any such phenomenon.

blood and surrounding parenchyma. Hence may be explained the gradual approach of the blood corpuscles to the sides of the vessels; the encroachment on the lymph spaces and subsequent stoppage, the effusions and exudations where the fluid portions of the blood are drawn through the capillaries, sometimes causing them to crack, and the blood corpuscles to extravasate.

This view of the increased attraction between the blood and parenchyma, should it be only regarded as mere hypothesis, appears, at least, to be forced on us by a certain necessity. It must only be regarded as a short mode of expressing facts, in the same way that we make use of attraction and repulsion to express electrical phenomena, or of gravitation to explain a variety of physical facts. We should also remember that a theory in science can only be considered as correct or useful when it embraces every known fact. If it do this it serves as a principle or guide, which enables us to group together isolated phenomena without fatigue to the mind. We hope that the discussion we have entered into, though it necessarily consists of close reasoning, sufficiently exhibits that we have attained this end, and that the early phenomena of inflammation may be ascribed, 1st, to a vital contractility and relaxation of the capillaries, analogous to, if not identical with, spasm and paralysis in muscles; and 2d, to an increased attraction between the corpuscles of the blood and the surrounding parenchyma.

V. THE ESSENTIAL PHENOMENON OF INFLAMMATION.

Hitherto we have described a series of actions succeeding one another, commencing in contraction of the capillaries, and terminating in the escape of the blood or portions of it into the surrounding tissues. All these actions, however, are not equally important, nor do they all constitute inflammation. Up to a certain point this pathological state cannot be said to exist. The

contraction and dilatation of the capillaries, the quick or slow movement of the blood, and even its stoppage, do not constitute inflammation. We frequently see these occur and pass off rapidly without causing any local or constitutional disturbance. Viewing the whole as a series of actions, we may readily understand that the process may stop short at any given point and then return to its normal state. This, indeed, is the case. When that stage where the vessels are dilated and gorged with blood, and its movement is arrested or nearly so, has arrived, it is denominated congestion. This may terminate in the extravasation of blood, the effusion of the serum, or an anormal exudation of *liquor sanguinis*. But it is only when the latter takes place that we can state positively our conviction of the presence of inflammation. Hence it may be denominated the essential phenomena of inflammation. Let us, however, examine more closely each of these occasional results of congestion.

Extravasation.—On examining the circulation in the tail of a living tadpole with a microscope, it will be seen, on the addition of acetic acid, and sometimes without, that, when the vessels are enlarged, the blood oscillating and about to stop, that many of the capillaries break in one or more spots. This often takes place in a stellate manner, and the blood escapes and collects in the form of a round button more or less large. The tail, if examined by a simple lens, will exhibit very minute red spots scattered here and there, and where these have apparently coalesced, the hemorrhagic spot will be more extended and irregular in form. In this case the congestion has terminated in hemorrhage. In man we see a similar evidence of a like extravasation in the bloody sputa of individuals attacked with pneumonia. In very acute inflammation of the brain also, we often find acute softening more or less connected with similar extravasations, which are then denominated capillary

apoplexy. We have every reason to suppose, that in these latter cases, as well as in the tail of the tadpole, the extravasation arises from over distention and rupture of the capillary vessels.

It can scarcely be conceived by any one who has carefully examined the blood-globules on the one hand, and the structure of the capillaries on the other, that the former can transude through the walls of the latter without rupture. Such an opinion may be considered as pure hypothesis, only supported by negative arguments. No one has even seen such an occurrence. All positive observation indicates that, when transudation of blood really occurs, as in purpura, hemorrhagic diathesis, &c., the blood-globules are no longer intact, but more or less broken down, whilst numerous granules are found in the fluid.

A very important question to determine is, how far such capillary hemorrhage is to be considered a proof of inflammation? We cannot suppose that the function of menstruation is a periodic inflammation, although undoubtedly the phenomena accompanying it are often nearly identical with those accompanying a genuine metritis. Local pains, accompanied by great constitutional disturbance, full pulse, hot skin, thirst, and all the symptoms of pyrexia, including relief from bleeding. Again, congestions recurring suddenly in the brain often produce capillary apoplexy and rapid death, the same as when a large vessel has been ruptured. But here again there is no evidence of inflammation, or of the existence of those symptoms which practical men have long attributed to cerebritis.*

Whilst, then, we know that capillary hemorrhage or extravasation of blood may occasionally accompany inflammation, we must deny that that circumstance alone is a proof of its existence.

Effusion.—That effusions of serum

are induced by injuries and applications which excite inflammation cannot be doubted. The application of a blister is a ready means of producing this result, and, it may further be well observed, in vesicular diseases of the skin. Effusions no doubt are very common, but, in the great majority of instances, they arise from venous obstruction, altogether independent of inflammatory phenomena. Enlargements of the liver, pregnant uterus, abdominal tumours, &c., produce ascites from interrupting the venous circulation, and diseased heart or lungs occasion anasarca for a like reason. Here certainly the effusion is not inflammatory. In all such cases the fluid is clear, holds no fibrin in solution, and on being evacuated shows no disposition to coagulate. In inflammatory effusions, on the other hand, the fluid is more or less turbid, containing fibrin in solution, and, if allowed to stand, flocculi swim in it or sink to the bottom of the vessel. If we allow the vesicle in a blister to remain we shall gradually see the fluid become more and more gelatinous and opaque. Even vesicular diseases of the skin induce exudation of blood plasma and a subsequent formation of pus, or produce scabs and crusts more or less thick, from the fibrin they contain drying on the surface. In short, in no case is it possible to procure pure serum, that is, serum unmixed with fibrin, as a result of inflammation. Hence, then, a great distinction between passive and active effusions, between venous and capillary dropsies.

Why it should happen that venous congestions are never accompanied by an exudation of the blood plasma whilst arterial congestions are, is a point that no one has yet endeavoured to explain. To me it appears certain that all inflammatory effusions occur through the capillary or intermediate vessels, and not in such vessels as may be properly called arteries or veins. The vein is, a very compound structure, and when distended to the utmost

* See Edinb. Med. and Surg. Journ. No. 157.

only permits the more fluid portions of the blood to pass through. The capillary vessel, on the other hand, is a most simple structure and exceedingly delicate, so that when distended we may readily understand that it admits not only the serum but the more inspissated *liquor sanguinis* to pass through also. But it is scarcely possible to suppose that the mechanical difference in the tenuity of the filtrating membrane should constitute the only distinction. It is impossible to reconcile the phenomena without having recourse to some active vital power of attraction between the blood and parenchyma, as formerly explained; — a power which, operating in the one case and not in the other, causes different constituents of the blood to become exuded. We are compelled, in all our considerations of the subject, to go back to this explanation, as to an ultimate fact.

Mere effusion, then, cannot in itself be considered as characteristic of inflammation. It may be the result of congestions non-inflammatory, or, if otherwise, passes more or less into exudation, which we shall now proceed to consider.

Exudation.—In every instance of undoubted inflammatory action an exudation of blood plasma occurs, which may be made visible. We have just alluded to this in connection with the subject of effusion, — a word which is often used synonymously with that of exudation. Thus we talk of pleuritic effusion to express an exudation of blood-plasma into the cavities of the pleura. In such situations where the *liquor sanguinis* is poured out into shut cavities nearly the same phenomena occur as when blood is drawn from the body. The fibrin coagulates and the serum is set free. The former then lines the serous membrane, and is denominated coagulable lymph, whilst the latter is called serous effusion. This is identical with the serum effused in passive congestions, but, unlike it, was separated from the vessel in the

form of *liquor sanguinis*, that is, holding fibrin in solution.

In parenchymatous tissues, however, as in the lungs, liver, brain, &c., the structure of the parts will not allow of this distinct separation. The *liquor sanguinis* exuded is, of course, at first fluid, and, in this state, insinuates itself amongst the elementary structure of the organs, filling up every minute space. When it coagulates, the tissues of the part affected are completely blocked up as if with cement. The blood-vessels, nerves, filaments, &c., are surrounded by a solid mass, in the same manner that the stones in a wall is surrounded by mortar. Hence increased hardness, density, and weight are communicated to such structures, constituting that state called hepatization, splenification, condensation, &c. Occasionally the *liquor sanguinis* seems to have the power of remaining fluid for a length of time without coagulating. Thus, Vogt relates a case where, on slicing the brain, a cavity the size of a walnut was cut across, from which a transparent fluid came out that afterwards coagulated. — Nothing also is more common than to find effusions into the pleura or peritoneum, which, although fluid on first opening the body, afterwards become turbid and are seen to contain flocculi.

Exudation of blood-plasma, then, is essential to inflammation. We have seen that congestion may terminate in hemorrhage, or in effusion without constituting inflammation. But whenever it terminates in exudation of blood-plasma, that morbid process may be said to exist. We do not possess any other positive proof of the presence of inflammation than this, and by regarding exudation as the essential phenomenon, we at once give precision and exactitude to the term, and separate it pathologically from other morbid processes with which it has no affinity.

According to the ideas at present entertained respecting inflammation, exudation, instead of being considered

as essential to that process, is rather regarded as one of its terminations. That is to say, pathologists conceive inflammation to consist of what we have called the early phenomena, which, according to them, are usually indicated by pain, heat, redness, and swelling. By adopting this view, however, they are plunged into a crowd of inconsistencies. They are unable to separate congestion from inflammation, or to explain any one phenomenon of the process. In point of fact, they confound the congestion leading to inflammation with the inflammation itself, and ascribe those symptoms to the former which in reality belong to the latter.

These symptoms, indeed, of pain, heat, redness, and swelling have been made to play too important a part in our views concerning inflammation. They are only present when the lesion affects the external surface, and are by no means applicable when it attacks many internal organs. I have seen cases of encephalitis where no pain or heat was manifested before death, and where no redness or swelling was to be afterwards discovered, although an undoubted inflammatory softening existed. Inflammation, also, may attack the lungs, liver, kidneys, &c., and yet one or more of these supposed cardinal symptoms be absent. Again, slight incisions, as those with a razor, are generally supposed to heal by means of inflammation, and so they do, but where is the pain, heat, redness, or swelling? In short, the symptoms of phlegmon, which so frequently come under the notice of surgeons, have been by them too generally applied to all inflammations. An analysis of these symptoms, also, will show that, whilst some depend upon the previous congestion, others are attributable to the exudation which follows it. Thus, the heat and redness are caused by the former, whilst the pain and swelling usually result from the latter. The presence of these symptoms, therefore, cannot be considered as essential to

inflammation, whereas this state can never exist, however slight or however severe, without exudation of blood-plasma.

Other pathologists have felt the difficulties which attend the considering exudation as a result rather than as the essential phenomenon of inflammation. Thus Dr. Alison observes, "in order to give the requisite precision to the general notion of inflammation as a local change of the condition of any part of the body, it seems only necessary to include in it, besides the pain, swelling, heat and redness, the tendency always observed, even when the changes in question are of short duration, to effusion from the blood-vessels of some new products; speedily assuming, in most instances, the form either of coagulable lymph or of purulent matter.* If, instead of "tendency to," we read *existence of*, effusion, the principle laid down is certainly correct. Yet only to exhibit the inconsistencies which attend the present method of regarding inflammation, let us observe what is stated by Dr. Symonds in the same volume, and in the article preceding the one just cited. He says, when speaking of purulent secretion, "purulent matter may be found in masses of various dimensions in the substance of the lungs, the liver, and other organs, notwithstanding there may have been no symptoms of inflammation in these parts during life, &c." "We cannot doubt that this deposition" (that is purulent matter) "may exist under circumstances which forbid our supposing that the organ in which it is found had been affected with inflammation, &c."† Hence, then, the very circumstance which Dr. Alison has considered necessary to give precision to the term inflammation, is acknowledged by Dr. Symonds as capable of existing without that process. Again, whilst some modern surgeons are of opinion that it is impossible for the

* Lib. of Med., vol. i., p. 53. † Ib., p. 24.

smallest wound to unite without inflammation (Asdley Cooper), others contend that it is opposed to adhesion or regeneration of parts (Macartney). These and various other discrepancies are at once removed by considering an increased exudation as the essential phenomenon of inflammation.

When the *liquor sanguinis* is exuded, it generally coagulates and constitutes a foreign body in the texture of the parts affected, which it becomes the object of nature either to remove from the system, or so to modify that its presence may be rendered conducive to the wants of the economy. For this purpose it undergoes certain vital changes, which differ in particular situations, and under certain circumstances. It serves as a blastema in which new organisms, that is, nucleated cells, are originated and developed. By means of the new growths thus produced, the exuded blood-plasma becomes converted into a variety of products, which are ultimately reabsorbed into the circulation, discharged from the body, or changed into permanent tissues. Occasionally, however, the exuded blood-plasma undergoes no such changes, it seems to lose its vitality, and is rendered incapable of either becoming absorbed, of passing into nucleated cells, or permanent formations. Under these circumstances, the blood-plasma effused, and the textures loaded with it, lose their vitality and die. All these various changes, which we shall next proceed to consider, may be denominated in the ordinary language of pathologists, the terminations of inflammation.

VI. TERMINATIONS OR RESULTS OF INFLAMMATION.

The expression, termination of inflammation, which has been sanctioned by general usage, is here used to signify the changes which the *liquor sanguinis** undergoes after having been ex-

uded through the blood-vessels. We have described the early phenomena, and the essential phenomenon of inflammation, and these changes constitute the resulting or subsequent phenomena.

What have hitherto been considered as the terminations of inflammation, viz., adhesion, softening, induration, suppuration, granulation, ulceration, gangrene, &c., modern pathology has shown to be in themselves highly complicated processes. John Hunter was of opinion that these various results were explained by supposing the inflammation to undergo certain modifications, or that it terminated differently according to certain tendencies which it possessed; hence the terms adhesive, suppurative, ulcerative and gangrenous inflammation. According to the view, however, which we have endeavoured to establish, viz., that inflammation essentially consists in an increased exudation of blood-plasma, it follows that this process in every tissue and under all circumstances is the same. The exudation having once taken place, any further changes we may observe in it will depend upon the amount or rapidity with which it is poured out, the tissue in which it occurs, its chemical and vital proportions, and the accidental circumstances which modify or destroy growth both in the vegetable and animal world.

Whenever the exudation of blood-plasma poured out coagulates, it can only be removed from or assimilated to the economy by one of two results, viz., by death, or by passing into organization. When it does not coagulate, which is an occurrence of great rarity, it may again pass into the vessels by endosmosis, and in this way the parts return to a normal state. Resolution, however, as at present understood, is a very compound process. It is used to express the disappearance of the inflammation, without its producing any external lesion. In this manner

* It is perhaps necessary to say that we employ the terms *liquor sanguinis* and blood-plasma as synonymous with each other, under-

standing by them the fluid portion of the blood composed of fibrin dissolved in serum.

resolution may follow hemorrhage, softening, or suppuration, and great difficulties impede our attempts to ascertain with exactitude how, under these circumstances, the exuded and organized blood-plasma is absorbed. For this reason, therefore, we shall discuss this portion of our subject in the following order: 1st, the termination of inflammation in death of the part; 2d, the termination in organization; and 3d, the termination in resolution.

1. THE TERMINATION OF INFLAMMATION IN DEATH OF THE PART.

This may be either acute or chronic, the former constituting mortification or moist gangrene, the latter ulceration.

Mortification.—Occasionally a very large amount of blood-plasma is thrown out, constituting a violent inflammation; a greater or less number of capillaries are also ruptured, and blood corpuscles are more or less mixed up with the *liquor sanguinis* exuded. The exudation thus formed compresses the part so as to obstruct the blood-vessels, and prevent the continuance of any circulation in it. Under these circumstances, instead of forming a blastema for the production of new organisms, it undergoes chemical changes which induce in it decomposition, and the part is said to be mortified, or to be affected with moist gangrene. This change commences first in the blood extravasated, which becomes of a purple colour, more or less deep; the corpuscles break down and become disintegrated, their hematozine dissolves and colours the serum, and should the exudation have coagulated, it forms brown, rust-coloured, purple, or blackish masses. An acid matter is now formed, which, acting on the neighbouring tissues, produces fetid gases, that are abundantly given off from the affected part. Sulphuretted hydrogen is evolved, which causes the blackish sloughs usually observed in such cases, and discolours silver probes and the preparations of

lead. After a time, the elementary tissues surrounding or involved in the exudation become more or less affected. The transverse striæ in the fasciculi of voluntary muscles become first pale, and are then obliterated. Cellular tissue, fat, and other soft substances, lose their connection and fall into an undefined granular mass. The tendons and fibrous tissue retain their characteristic structure for a long time after the other soft parts have been reduced to a softened pulp. The bones resist the action longest, but at length become rough, soft, and, commencing externally, are more and more broken down, and reduced to the same pulpy consistence and granular structure as the surrounding parts.

As the tissues thus become broken down and fluid, they are discharged from the system in the form of an ichorous matter, which, examined microscopically, presents numerous granules, imperfect or broken down cells, blood corpuscles, and fragments of filamentous tissue or the other structures involved. If the morbid action be seated in the subcutaneous tissue, the skin soon becomes involved, and an opening is formed, which rapidly increases and gives vent to the discharge. In a similar manner gangrene of internal organs, by destroying the intermediate parts, at length enables the discharge to reach the surface, or to find its way into the excretory passages, such as the bronchi, the intestinal canal, the *meatus auditorius*, &c. In this manner life may be endangered by the destruction of organs important to life, by the exhaustion occasioned by the discharge, and sometimes by the absorption of the ichorous matter, which, by entering into the circulation, acts as a poison to the economy.

It may be asked whether inflammation and gangrene are similar processes,—whether the latter is only a greater intensity of the former,—or whether, when gangrene follows inflammation, it is dependent on other circumstances, such as a peculiar state of the

atmosphere favouring the decomposition of the exudation poured out. In order to answer any of these questions we must distinguish between mortification arising from a variety of circumstances, and an inflammatory gangrene properly so called, the which is undoubtedly the rarest of all the terminations of inflammation. We frequently see mortification produced by the application of chemical or mechanical agents, which directly destroy the tissues. It also arises from severe and complicated injuries, in which arteries leading to the portions of structure affected have been divided or crushed. In old persons it follows obstruction in the blood-vessels, or is dependent on circumstances not yet ascertained. In none of these cases is it caused by inflammation. But when stasis of the capillaries is produced to a considerable extent, followed by the exudation of a large quantity of blood-plasma, which instead of passing into organization, undergoes the changes previously described, then an inflammatory mortification, properly so called, is produced. We see this take place after burn, a long exposure to frost, and in certain cases of erysipelas. Here the amount of exudation is considerable, the pressure caused by it extreme, the obstruction to the circulation in the neighbouring parts correspondingly great, and these, as well as the exudation itself, die. In this sense, therefore, it may be said to depend on the severity of the inflammation. This, however, is not the case in the sense of those who consider the adhesive, suppurative, and gangrenous inflammations as different stages of one process. Suppuration, as we shall afterwards see, has no connection with adhesion, nor is it in any way related to mortification. It is a primary alteration of the exudation. Its vitality is lost, and, instead of passing into organization, as we shall hereafter describe it, it at once becomes subject to the chemical laws of dead matter.

On the other hand, mortification occasionally arises under circumstances

in no way connected with the amount of the exudation, or the rapidity with which it is thrown out. During the summer of 1836, I watched with great care the progress of a sloughing gangrene, prevalent not only in the Infirmary of Edinburgh, but through the city generally. All kinds of sores and wounds were affected by it, even those of a specific nature, such as chancres. Neither youth or age was exempted from it. It affected not only those who were debilitated from disease, by intemperance or bad diet, but those also in the most robust health. Thus a servant girl, aged 16, who had never suffered from illness, and of a robust constitution, fell down upon some glass bottles, and slightly cut her left thumb. A week after, she entered the Infirmary with an ulcer the size of a shilling, filled with a brownish-black slough, and discharging a fetid and sanguineous fluid. In this, as well as other cases which occurred, it became impossible to attribute the gangrene either to the violence of the injury, the amount of exudation, a state of cachexia, or indeed to any circumstances connected with the individual. It could not arise from contagion, as it existed in different parts of the city, was not confined to the Infirmary, and the system of dressing wounds there precludes the possibility of this explanation. We are, therefore, compelled to ascribe the cause to something without. Most writers have noticed the connection between a certain state of the atmosphere and the prevalence of hospital gangrene.* Its frequent occurrence in summer, that is, at a period of the year when increased temperature favours the decomposition of animal matter, and the good effects which result from change of air, when every kind of treatment fails, still farther point out its origin from changes occurring in the atmosphere.

* See Boggie, Thompson, Hennen, and Blackadder on Hospital Gangrene.

CONTRIBUTIONS TO THE PATHOLOGY OF
THE BRAIN.

By S. SOLLY, Esq., F.R.S.,
Senior Assistant-Surgeon to St. Thomas's
Hospital, &c.

To the Editor of the Medical Gazette.

SIR,

I shall feel obliged by your inserting the following pathological facts, which I have had the opportunity of observing and recording through the kindness of my friends Dr. Conolly, and Dr. Begley, of Hanwell. — I am, sir,

Your obedient servant,

S. SOLLY.

St. Helen's Place, Nov. 1844.

The accounts which we have of the post-mortem examinations of the brains of idiots are not on the whole satisfactory, and it has not unfrequently happened that no morbid appearance could be discovered.

The record of them is useful; and though my views regarding the relation which in this case they bear to the mental condition of the patient during life may not be admitted by all, I trust they will induce others to pay particular attention to the condition of all the commissures, in their pathological examinations.

His general characteristics are thus detailed by Sir Alexander Morison, in his admirable work entitled the "Physiognomy of Mental Diseases," p. 221, accompanied by a most striking sketch of the appearance of the poor fellow during life.

This idiot is four feet six inches in height; his head does not differ much in size from the head of a sane person; it is rather depressed in the frontal portion.

The measurement of the head is —

| | |
|-----------------------------|-------------------------|
| The circumference . . . | 21 $\frac{3}{4}$ inches |
| Occipital frontal curve . . | 12 $\frac{1}{2}$ |
| Longitudinal diameter . . | 7 $\frac{3}{8}$ |
| Transverse diameter . . . | 5 $\frac{3}{8}$ |

His lips are thick and his mouth is gaping, allowing the saliva to drop out of it; his teeth are good, but very irregular; his gait is awkward and unsteady; in walking, he stoops forward,

his knees a little bent, and his arms hanging before him as if he were about to fall; his usual position is that of leaning against a door and gently beating his head upon it.

He appears to possess the external senses — that of feeling is very obtuse; he cannot say any more than *tee teet*, which he frequently repeats, particularly in bed; he sleeps little; his temper is good; he is inclined to laugh, but in a very discordant manner; he can feed himself, but cannot dress or undress; he is inattentive to the calls of nature; he does not exhibit affection for any one, appears to have no sense of shame, and music does not excite any emotion in him. He is said to be inclined to onanism.

From Dr. Begley I received the following: —

Case of the Idiot Daniells.

"James Daniells (called George Daniells in the certificate), aged 33, single. His mother states that when she was eighteen years of age, and pregnant of the patient (her first child), she in walking through a street in Spitalfields, accidentally trod upon a rat which ran across the foot-path from under an old watchman's box: the animal on being trodden upon turned round and bit the heel of the narrator, who was much frightened, and swooned away, and in about a week afterwards was delivered of the patient, a seven months' child: the boy was fully formed and very healthy, and continued to be so till he was three years old: at that age he was seized with 'convulsive fits,' which lasted seven hours: on these subsiding he was found to have lost the use of his limbs, he could not walk nor stand, and his head fell to one side on his shoulders; he could not articulate; whereas, before this attack, he used to run about the house and talk like other children of that age; he used even to go to a neighbour's for sand, tape, a bellows, or any thing else that his mother might have sent him to borrow: he used to call 'dada' when he saw his father, and he addressed other persons by their proper names; but after this attack he appeared to lose all intelligence.

"She stated distinctly that they were not connected with dentition.

"Medical aid was resorted to without benefit; he became an out-patient of St.

Thomas's Hospital under Dr. Currie: electricity was employed: the convulsions frequently returned, the narrator thinks most severely at the new moon; he was sent to school, but could not be taught anything, and was very mischievous: he was kept at home until about 14 years ago, when he became so troublesome it was not possible to manage him; he was then sent to a private asylum, and some time afterwards to this institution. Narrator has had six other children, all of whom are sane and healthy.

"W. BEGLEY.

"Hanwell, Oct. 1844."

Autopsy 30 hours after death.

The anterior portion of the skull-cap very much thickened, at least twice its natural thickness. The external surface of the dura-mater more vascular than normal for the age of the patient. Slight sanguineous effusion diffused in small spots and patches on the arachnoidea reflexa lining the surface of the dura mater, not confined to the upper part, but extending to the base of the brain. This could be scraped off.

Some serous effusion underneath the arachnoidea investiens. I collected four ounces of sanguineo-serous fluid altogether, but a portion of this was from the ventricles. The anterior lobes of the brain rather smaller than usual; the convolutions generally small and narrow. The medullary substance of the brain rather vascular; hemispherical ganglion of natural colour. The *neurine* of the septum lucidum was entirely absent, and only the lining membrane of the ventricles left; so that all those longitudinal fibres of the fornix which run through and from that septum were deficient. Central portion of the fornix soft; the crura cerebri and both the thalami were also softened, but not discoloured.

Weight of cerebellum and medulla oblongata, six ounces two drachms.

Cerebrum, lb. ij. 3ij. 3ij.

Inflammation of both lungs, — of the pleura on the left side, with purulent effusion.

Slight inflammation of peritoneum.

REMARKS. — In considering the deductions we can legitimately draw from these post-mortem appearances, we must separate those which are recent from those which are of long standing, as the latter alone could have been the cause of the idiocy.

First, the thickness of the skull is common in all cases of atrophy of the brain from disease; the growth of the skull fol-

lowing the shrinking of the brain. The hemispherical ganglion, which is now admitted to be that portion of the brain which more directly ministers to intellect than any other, was not altered in structure, which would have been the case if the skull had grown into, and thus pressed upon the brain; so that this condition of the skull must be regarded as the consequence, not the cause, of the condition of the brain which produced this idiotic state of mind.

The anterior lobes of the hemispherical ganglion, though small, were not so deficient as to account for idiocy, and the substance of the ganglion was healthy and natural.

The softening of the fornix and thalami was asthenic, and very possibly not very recent in its production: so that it appears that the only abnormal appearance which we can suppose to have been co-existent with the idiotic condition of the boy, is the deficiency of the medullary fibres of the septum lucidum. To those physiologists who regard this portion of the brain as a mere septum, this fact is of little interest; but to those who agree with me in regarding it as an important portion of the commissural apparatus of the hemispherical ganglion, the fact will be interesting. I find it necessary to advert to the fact that I demonstrated in my work on the Brain (see page 186, and plate ix., fig. i., and page 428, for physiological inferences, for pathological states), that the septum lucidum consists of longitudinal fibres, which, running backwards from the anterior portion of the hemispherical ganglion, form a portion of the inferior longitudinal commissure or fornix, for most writers on this subject since have neglected to observe it. And though physiologists may disagree with me in my view of the office of the septum lucidum as a portion of the intellectual apparatus; I know that they will find, if they take the trouble to examine it, that I am correct in my account of its anatomical structure and the direction of its component fibres.

I have long regarded, and taught in my lectures, that the commissures are the instruments by which impressions are conveyed between one portion of the hemispherical ganglion and another, just as the nerves are the instruments by which impressions are conveyed from the external world to the brain. If a portion of the commissural apparatus be deficient, then, I believe, is the individual in whom the deficiency exists deprived of the means of comparing the impressions which his o-

sense convey to his brain; and consequently becomes idiotic from this serious defect in his mental apparatus.

It is very difficult to reason with any satisfaction upon the account of the progress of the idiotic condition of this lad from the mother's state, in relation of the condition of the brain after death. But the explanation which I should venture to propose is this. That about the age of three, the convulsive fits which occurred were occasioned by slight inflammation of the lining membrane of the ventricles, and some serous effusion into these cavities, and that absorption of the septum lucidum followed the subsidence of the attack.

It may be said that the idiocy was more probably occasioned by the serous effusion generally pressing on the hemispherical ganglion, and thus annihilating its function; but if such had been the case, would not this ganglion have been altered in structure!

ON THE NATURE AND SEAT OF HOOPING COUGH.*

By J. S. Streeter,

One of the Presidents of the Physical Society of Guy's Hospital,

(For the Medical Gazette.)

In the paper of this evening, I propose to bring before the Society one particular subject for discussion connected with whooping cough, rather than attempting a general essay on the complaint. The adoption of such a limit seemed absolutely necessary in order not to exceed the time usually allotted for papers, and to avoid the necessity of entering into a detailed account of the many important and protean complications with which the simple disease is so often encountered in practice.

The subject which I have chosen with the hope of contributing somewhat to the elucidation of this extraordinary complaint, is the nature and seat of the disease. As every theory advanced or advocated requires to be tested by its adequacy to explain the phenomena observable in the disease by its morbid anatomy, and by the effect of remedies which enjoy popular or professional reputation in its treatment, I trust the subject will not be without sufficient practical interest to elicit discussion, and justify its introduction here.

Before my present audience any extended description of the symptoms, progress, duration, and terminations of so common and fa-

miliar an affection, would be misplaced and superfluous. For the immediate purpose of this paper it will be only requisite to remind them that the symptoms of the simple uncomplicated disease are divisible into two stages.

1st. The *catarrhal*, marked essentially by irritative and dry cough, somewhat sharper perhaps, but never absolutely distinguishable from that of an ordinary or an influenzal catarrh. This stage is ushered in by more or less fever, usually not very noticeable in a child; but in the adult, as far as my observation and inquiry have extended, the headache and general oppression have been rather severe than otherwise.

The 2d, or *hooping stage*, which seldom commences before the second or third week, is marked by the peculiar convulsive cough, whose paroxysms distinguish and give name to the disease. Each paroxysm of cough is always terminated by the expulsion of mucus from the air passages by the act of expectoration or vomiting, or by a combination of both these processes. After the expulsion of this mucus the mechanical disturbance of the respiration and circulation occasioned by the coughing gradually subsides, and these important functions resume their ordinary and normal state until they are again disturbed by the access of another paroxysm.

On analysing the paroxysm it will be found that it commences with forcible and progressively shortening efforts of expiration, which succeed each other with great rapidity, during which the lungs become as far as possible exhausted of air, till at length they are suddenly replenished by a deep, forcible, and partly spasmodic inspiration, which completely fills every air-cell. During this inspiration the peculiar sound—the hoop—takes place, and is obviously caused by the inward rush of the air through a partially and spasmodically closed glottis, which no act of the will can imitate. The number of expiratory efforts which precede the deep inspiration is greater in the young subject than in the adult, and produces some modification in the character of the hoop.

Each paroxysm of coughing is preceded by a tickling or pricking sensation experienced at the lower parts of the trachea, which gives warning of the approaching fit. This premonitory sensation produces the inquietude and alarm observable in the very young just before the paroxysm, and induces the older to secure the most favourable position for the expulsion of the abnormally saline secretion that is formed by the catarrhal affection of the bronchi which constitutes the disease, and which saline mucus, by its presence in the larynx, where it acts precisely as a foreign body on the sensitive membrane, I regard as the true and exciting cause of the suffocative paroxysms of the second stage.

Before concluding this sketch of the simple uncomplicated disease, it may be well to add

* Read before the Physical Society of Guy's Hospital, Dr. G. O. Rees in the chair, November 2, 1844.

that it appears to me unquestionably contagious, and that it usually attacks only once during life. To the latter circumstance, however, as in the case of the exanthematous fevers, there are occasional and not very unfrequent exceptions. Its occurrence at the adult age is, I believe, less uncommon than is generally imagined, for I am personally acquainted with many adults who have been visited by the disease; among these my brother, who experienced a second attack in the 44th year of his age.

The authors who have noticed or written especially upon this disease, like the names that have been assigned to it, are many. Dr. Forbes, in the Medical Bibliography attached to the Cyclopædia of Practical Medicine, has enumerated no less than fifty-five while the estimable author of the Dictionary of Practical Medicine—a veritable Hercules in Æsculapian researches—has filled more than two columns with minion type in enumerating the names of writers on it, and the mere titles of their works. "Tot homines, tot sententiae," says the proverb, and, as might be expected, great diversity of opinion has been entertained on the precise nature and seat of the disease. For an abstract of these views I refer to the able works I have just mentioned, and to the special treatises of Dr. Watt and Dr. Hamilton Roe, the only ones with which I am at all familiar.

The opinions advanced by most of these writers seem, for the most part, to be reducible to a few general heads. 1st. That which regards hooping cough as essentially a *spasmodic affection of the air passages* arising from a primary irritation, inflammatory or nervous, of the brain, or of one set or more of the respiratory nerves. This theory is advocated and variously modified in the opinions advanced by Hoffman, Cullen, Hufeland, Jäger, Leroy, Lobenstein, Guibert, Breschet, Webster, and Copland.

Dr. Webster considers the affection of the respiratory organs as secondary and dependent on a primary irritation, inflammatory in its nature, of the brain or its membranes, or both combined. Most of the advocates, however, of the nervous theory, from Hoffman down to Copland, regard the pneumo-gastric nerves as the primary seat of the affection; but others, as Jäger, Lobenstein, and Leroy, locate the irritation in the phrenic nerves. Others, again, as M. Blache and Dr. Hamilton Roe, place the nervous affection in both the mucous membrane of the bronchi and in the pneumo-gastric nerves. With this opinion, Albert of Bremen, Pinel, and also Laennec, according to the statement of Dr. Roe, substantially coincide.

2d. That which considers the disease as an inflammatory affection of some part of the mucous membrane of the air passages; an opinion which numbers among its advocates the names of Darwin, Watt, Alcock, Dewees, Dawson, Marcus, Guersent, Broussais, P. stan

and Duges, and in support of which, that of the immortal Laennec, is quoted by Dr. Johnson, in his excellent article in the Cyclopædia of Practical Medicine.

Dr. Watt believes it "in all cases an inflammatory disease, whose chief seat is in the mucous membrane of the larynx, trachea, bronchi, and air-cells, possibly attended with a minute exanthematous eruption there. He considers that when mild this inflammation runs its course without materially disturbing the other functions of the body, or even the functions of that very membrane in which it is seated, and that whenever hooping-cough proves dangerous or fatal, it becomes so by the degree of inflammation in the natural seat of the disease, or by that inflammation extending or being translated to other parts." Most advocates, however, of the inflammatory origin of the disease, limit the inflammation to the trachea and bronchi, except Dawson, who confines its first seat to the membrane of the larynx, or strictly speaking to that of the glottis—an opinion, by the way, not widely differing from that of Astruc, who of old describes it as "an inflammation of the superior part of the larynx and pharynx."

3d. That which views the complaint as at first inflammatory and afterwards spasmodic. This opinion has been principally advocated by Desruelles, and adopted by Dr. C. Johnson. Desruelles makes the disease consist in a primary inflammation of the bronchi, complicated with a consecutive cerebral irritation, which by its influence over the diaphragm and respiratory muscles, and over those of the glottis and larynx, changes the simple cough of bronchitis into one of a convulsive character.

4th. That which refers the disease, or at least the production of the peculiar paroxysms of the second stage, to a physical or chemical irritant introduced within the larynx, whether applied from without or after, it has been engendered in the blood, or in the secretion of the respiratory organs themselves.

Under this head may be arranged the opinion of Linnæus, who referred it to the presence of minute insects in the air; that of Sydenham, who imputed it to a subtle and irritating vapour in the blood which affected the lungs; that of Boëhne, and also partially that of Rosenstein, who ascribe it to a peculiar miasma acting chiefly on the nerves; but it is the opinion originated by Dr. Bland, of the Hospital Beaucaire, that I wish to place prominently before the Society, because it is the theory, which my experience leads me, with only a slight modification, to adopt as the one most consistent with the phenomena observable in the symptoms, pathology, and successful treatment of the disease. It was originally published in the *Revue Médicale* for March, 1831, and subsequently transferred in substance to the *Lancet*, April, 1831; and Johnson's *Med. Chir. Rev.*, October, 1831. It, however, escaped the vigilance and industry of both Dr. C. John-

son and Dr. Copland, and is dismissed with a slight allusion by Dr. Roe, because chemical demonstration was wanting.

Dr. Bland considers the primary cause of the disease to consist in an irritation, not an inflammation, of the mucous membrane of the bronchi under which the glands and follicles of that membrane pour forth a specific secretion saturated with hydrochlorate of soda, the irritation of which, when it reaches the upper part of the trachea and larynx, throws the muscles of the glottis and of respiration into spasmodic action for its expulsion, in a manner exactly similar to any foreign body which accidentally enters the larynx.

From this theory of the nature and seat of the disease I so far differ as to regard the primary affection of the bronchial membrane as inflammatory in its nature, and believe that it will be found on careful observation to be attended by more or less fever of an analogous character to that which attends contagious catarrh or influenza; but to that part which views the presence of a saline secretion in the trachea as the proximate cause of the convulsive cough which ushers in the second stage, I give my unqualified assent; because I believe it demonstrably true. When, however, the convulsive hooping is fully established, it very commonly happens that symptoms which mark the third, or what may be appropriately termed the complicated stage are developed, and continue to mark the varying and formidable phases of the disease which mostly attract attention in practice. These tertiary phenomena usually manifest themselves—1st, as special lesions of the nervous and muscular systems; 2dly, as special lesions of the respiratory organs; or 3dly, as the more general affections of fever and cachexia, and are present in individual cases in every conceivable variety of combination.

The 1st class comprise—an exalted sensibility and morbidly susceptible state of the membrane of the larynx, the pharynx, the epiglottis, under which death from asphyxia may suddenly occur—morbid association of the action of the muscles of glottis and respiration, in consequence of which the cough continues from mere habit, or is reproduced by the most trivial irritation of the air passages; reflex irritation, often passing into inflammation of the nervous centres of the pneumogastric nerves, involving those of the phrenic nerves also; and finally, these reflex affections may extend to the whole of the brain, or to the medulla oblongata and their meninges, and prove fatal by inducing general convulsions or hydrocephalus. All these, be it observed, are pathological conditions of the nervous system which have been so constantly put forward in high relief by the advocates of the nervous theory as proximate causes of the disease itself.

The 2d class of tertiary phenomena include the various congestive and inflammatory affections that result from the mechanical disturbance of respiration and circulation, and the exten-

sion of the primary bronchial inflammation to the trachea, larynx, and pharynx, and the tissues of the lungs themselves. Epistaxis, hæmoptysis, and fatal emphysema from extensive rupture of the air-cells, have occurred within my own experience, and have apparently resulted from the mechanical violence of the cough acting upon tissues previously weakened by disease.

Of the 3d class I have only to observe, that in the absence of cerebral or pulmonary inflammation, the fever of the third stage is always æthenic, and often assumes a remittent type when the cachexia is of a mæraemic character.

The evidences of the truth of this theory, upon which I place reliance, are—the testimony of adults, who have been attacked by the disease, to the unusual and excessively saline taste of the expectoration so long as the paroxysms are severe—the resemblance of the expiratory efforts in hooping cough to those made by the excitatory system, for the expulsion of a foreign body from the larynx; the very adequate explanation it affords, both of the extraordinary and spasmodic muscular actions which accompany the cough, and of its occurrence in paroxysms after intervals of uncertain duration; and lastly, the key which it furnishes to the chaotic host of apparently opposite remedies that have obtained professional or popular reputation in its treatment.

Of these remedies, we find one group adapted to lessen the original bronchial affection, and favour the expulsion of the offending mucus—as emetics, antimonials, and counter-irritants applied over the chest; another, which acts by altering the quality of the secretion, as the alkaline carbonates, ammonia, and sulphuret of potash, so strongly recommended by Dr. Bland himself; another by exciting a new action in the bronchial membrane; and constricting the vessels put a stop to the secretion in a manner perfectly familiar to the physician in chronic bronchitis, and to the surgeon in purulent ophthalmia—the superacetate of lead, alum, common resin, T. cantharides in Bals. Copaiba, tar vapour, and even the inhalation of nitrous vapour, &c. Others, again, as musk, both native and artificial, camphor, arsenic, conium, belladonna, opium, and hydrocyanic acid, are more especially adapted for the nervous lesions; and antiphlogistic measures meet the inflammatory lesions of the third or complicated stage.

The popular remedies are, indeed, so numerous, that one is strongly reminded of the caution which Mr. Pettigrew informs us, in his late interesting work "On the Superstitions connected with the History and Practice of Medicine and Surgery," p. 73, is common in Devonshire and Cornwall, and some other parts of England, viz., "to inquire of any one riding on a piebald horse of a remedy for the hooping cough, and whatever may be named is regarded as an infallible specific."

There is yet wanting to complete the whole

a chemical examination of the bronchial secretion, to determine the exact nature of its saline constituents. From this, as I have not had the disease, prudence will lead me to refrain; but I shall conclude by expressing the hope that ere long it will be instituted by the advanced chemical pupils of this hospital, under the auspices of the pre-eminently qualified author of the article "Mucus," in the *Cyclopædia of Anatomy and Physiology*; the scientific physician who so worthily fills the chair of the Society on the present occasion.

CASE OF ACUTE POISONING BY CARBONATE OF LEAD.*

By JOHN SNOW,
Fellow of the Royal Medical and Chirurgical Society.

I was called between 9 and 10 o'clock on Wednesday morning, the 8th of May last, to Henry Woodley, aged 5 years, living at 1, Rose Street, Soho, and found him suffering with symptoms of poisoning. I ascertained that, on the Saturday night previous, he had eaten some white-lead ground up with oil, which another boy had stolen, under the impression it was putty, from the door of an oil-shop in the neighbourhood, where it was exposed for sale. The quantity he had was not larger than a marble, and he did not eat it all, as a small portion was found on the floor afterwards. He complained of bellyache the next morning, and his mother gave him a dose of salts and senna: this did not operate, and the pain in the abdomen still remaining on the following day, she gave him rhubarb and jalap, and afterwards castor oil, and the bowels were opened on Tuesday evening for the first time. The child's mother did not think his illness serious, and did not mention it to me, although I was attending her husband; she thought what he had eaten was only putty, which is not poisonous. During Tuesday night the pain in the belly greatly increased, and vomiting commenced for the first time. On Wednesday morning I saw the child as I have stated. He was in great pain, which he referred chiefly to the *scrobiculus cordis*; he vomited

constantly a brownish liquid containing streaks of blood; his skin was hot, and his pulse 140 and hard; the face was swollen and of a purple colour; the conjunctivæ were red, not only from injection of the vessels, but from blood extravasated and coagulated beneath the membrane; the nostrils contained blood, and the body was spotted with petechiæ; the gums were tense, shrivelled, and milk-white. Some leeches were applied to the epigastrium, and an emulsion containing Epsom salts given. He passed some greenish-black, semi-fluid motions of a very offensive odour. At 11 o'clock the pain continued, with occasional vomiting; the pulse was small and the extremities were getting cold; there was palpitation of the heart. At 1 o'clock, on injecting the bowels I found that there was complete relaxation of the sphincter ani. The pulse at the wrist ceased shortly afterwards, the tracheal râle set in, and he died at two o'clock, about ninety hours after taking the poison. The heart beat above 100 strokes after the respiration. There was no delirium or other lesion of intelligence.

An examination of the body was made eighteen hours after death, in which I was assisted by my friend Mr. Marshall, of Greek Street, who took notes of the appearances. The cuticle was loosened from a great portion of the body, and a quantity of serum flowed from the nostrils on moving the head. The gums presented the white appearance observed before death: the pericardium was filled with serum deeply tinged with blood, and each pleura contained several ounces of similar fluid. The heart was soft and flabby, and there was a little red fluid blood in the ventricles. There was ecchymosis of the surface of the lungs, and they were engorged posteriorly. There were two spots of ecchymosis beneath the mucous membrane of the œsophagus near its lower end: otherwise this tube was healthy. The stomach contained a little liquid similar to what had been vomited, and, throughout its entire extent, the mucous membrane was dark, brown, swollen, and puffy, and there appeared to be extravasation of blood beneath it in addition to great injection of the vessels: this state did not extend to the duodenum or œsophagus. There was a bright red injection of part of the cæcum, but the rest of the alimentary canal was of the natural pale colour, and was not contracted in any part. It contained a little clay-coloured fecal matter in the form of small

* This was related to the Westminster Medical Society, on the 19th inst.

pellets. The kidneys were large and flabby, and the liver, which was of a darkish colour, instead of presenting its usual firmness, was like soft leather; it could not, however, be torn with greater ease than natural. There was a peculiar odour about the body; not that of putrefaction. The head was not examined. The matters vomited, and those found in the stomach and intestines after death, and likewise the substance of the stomach, were all subjected to a careful chemical examination, but no lead, or, indeed, any other poison was detected.

Although slow poisoning by white lead is very common, occurring to painters, and several other classes of workmen who use it or manufacture it, acute or sudden poisoning by this, or indeed any other salt of lead, is not common. They are seldom chosen for murder or suicide, and, although extensively used in various trades, they do not often lie exposed, like arsenic or oxalic acid, in such a shape as to be mistaken for any article of food or medicine. In the few authors to whom I have referred, I have not met with any fatal instance of poisoning by a single dose of carbonate of lead. Mr. Taylor mentions, in his Jurisprudence, the case of a woman, attended by Mr. Cross, who took six or eight drams of it, by mistake, for magnesia, and recovered by the use of remedies. Orfila gave half an ounce of it to a dog, and it vomited several times within twelve minutes, and was no worse afterwards; and Dr. Christison quotes from a German journal the case of a young woman who swallowed accidentally an ounce and a half of it, without any bad effect, either at the time or afterwards. That it is very poisonous, however, we have sufficient evidence; for the carbonate is the form in which lead is introduced into the system of painters, and of most artisans who suffer from it, and, generally, of those who are poisoned by water impregnated with this metal. The morning after this child had taken the poison, his mother gave him, as it happened, some Epsom salts amongst senna tea. Now sulphate of magnesia is an antidote, for the soluble salts of lead, but as it does not act on the carbonate at ordinary temperatures, it could only be of benefit by neutralizing any portion which might be decomposed by the acids of the stomach, and unabsorbed at the time. Several hours had already elapsed when it was administered, and as it was not repeated, we need not wonder that it did not stop the fatal effects of the poison. In addition to emetics and the stomach pump, Mr. Taylor very judiciously recommends the combination of some weak vegetable acid, as vinegar or lemon-juice, with solution of sulphate of soda or magnesia, in cases of acute poisoning by carbonate of lead.

From what I could learn, this child appeared for three days to suffer only from symptoms of lead colic, viz., pain and constipation of the bowels; and the intense and general gastritis of which he died would seem only to have commenced, or at least to have become severe,

about twelve hours before death, as it was not till then that vomiting came on.

When I saw the child, which was not till within five hours of his death, he seemed to be labouring under all the effects of a corrosive or irritant poison, which one would have supposed had been taken only a few hours, instead of nearly four days. In the case I have quoted from Mr. Taylor, and in those I have seen recorded, of poisoning by the other salts of lead in large doses, vomiting, and other symptoms of violent gastric irritation, came on soon after the ingestion of the poison. The comparative mildness of the symptoms in this case for three days probably depended on the incorporation of the white lead into a tough mass with oil, which might retard its operation, and cause it to act only by degrees, in proportion as it became digested.

The white, tense, and contracted state of the gums, is worthy of notice. The gums were white and excoriated in a case of poisoning by the acetate of lead, quoted by Mr. Taylor, when the patient recovered. Acetate of lead is administered, occasionally, as a remedy in mercurial ptyalism. Dr. Burton has directed attention to a blue line on the gums in persons suffering under the chronic influence of lead; and I have, in two instances, seen the gums severely ulcerated in painters who had not been taking mercury.

No lead could be detected in the body after death, or in the matters vomited; but we need not be surprised at this, when we consider that the patient survived till the fifth day. It is a negative result that has been obtained in other cases of death from this poison. He had been vomiting several hours before anything was saved for examination, and the fæces passed during life, which exhibited a peculiar dark colour, such as a mixture of sulphuret of lead with them might be supposed to occasion, were not subjected to analysis. — *Med. Gaz.*

ON THE PASSAGE OF MEDICINAL SUBSTANCES THROUGH THE HUMAN ECONOMY.*

MM. Millon and Laveran, after going through a series of researches, with a view to ascertain in what manner certain medicinal substances affect the urinary secretions, have arrived at the following interesting results:—

The substances experimented on were, principally, the double tartrate of soda and potash, which was administered 268 times; the sulphate of soda, which was administered fifteen times; sulphur, four times; and salicine, ten times. The tartrate of soda and potash was chosen in order to ascertain whether the opinions generally entertained respecting the

* Académie des Sciences (Paris). August and October. — *Lancet*.

conversion of alkaline tartrates, citrates, and acetates, into carbonates, in the animal economy, are correct. So far from this being *invariably* the case, it was found that the transformation was very uncertain. Thus, of the two hundred and sixty-eight cases in which the double tartrate was administered, in one hundred and seventy-five the urine was alkaline; in eighty-seven, acid; and in six, neutral. The mode of expulsion of the salt appears to depend nearly entirely on the mode of administration. If taken in large doses—ten or twelve drachms, for instance, in a limited period—its effect is generally concentrated on the intestinal canal, and its ingestion is followed by several liquid stools. Sometimes, however, no purgative effect is produced on the digestive tube, and then the urine is alkaline, the salt evidently being absorbed and expelled through the urinary organs. When the same quantity is administered in fractional doses, during a period of ten or twelve hours, the effect produced is different. The salt does not then give rise to purging, but is absorbed and eliminated as an alkaline carbonate by the urinary organs. In the first instance, indigestion follows its administration, and it may be looked upon as an aliment; in the second, there are absorption, assimilation, and secretion, and it is then a medicine. In order to ascertain whether, when the urine was acid or neuter, after the administration of the salt, the soda and potash might not escape non-decomposed, combined with tartaric acid, or united to some organic acid, several experiments were instituted, by which it was ascertained that the proportion of alkali contained in the acid or neutral urine was identically the same as that contained in normal urine. It thus became evident that the double tartrate did not escape, as such, along with the urine.

Robust men, slightly unwell, showed the greatest aptitude to digest the tartrates. They occasionally digest part of the salt, even when given at once in large doses. Sometimes, although administered in fractional doses, the urine remained acid. This was the case when the patient was attacked with diarrhoea, or was in an acutely febrile state. But even then, by persisting in its use, the urine, at first acid, gradually became alkaline. On the other hand, absorption was favoured by constipation.

The administration of the citrate, in absorbing doses, was tried in pneumonia and rheumatism. The blood of the patients thus treated was analyzed ten times. The fibrin was not found to have diminished in quantity, and the buffy coat was as great as before it had been given. Although the alkaline carbonate was formed in the urine, these diseases progressed as usual. The increase of the

powers of oxidation, rendered evident by the excess of urea, led to its trial in cases in which the nutrition was languishing, and it was found useful in general debility, phthisis, albuminuria, &c.

The sulphate of soda gave the same results as the double tartrate. Sulphur was never found in the urine, under whatever shape it was administered. — *Lancet*.

INFLUENCE OF DIET ON THE FORMATION OF FAT IN HERBIVOROUS ANIMALS.

M. Boussingault communicated a memoir on the above subject. Wishing to ascertain whether sugar and amidon contribute directly to the formation of butter, he had fed two cows for some time, solely on beet-root and potatoes. The question is an important one, as, were this the case, these latter substances might, with great practical advantage, be substituted for the hay, straw, and grains, with which herbivorous animals are now fed.

One of the cows had calved ninety days, and the other forty days, previous to the commencement of the experiment. They were both thriving on the usual stable allowance—viz., for the twenty-four hours, each: Hay, twenty-four lbs.; potatoes, sixteen lbs.; beet-root, twenty-four lbs.; colza cakes, two lbs.; chopped straw, *ad libitum*. The medium quantity of milk given under this regimen, was eight or nine pints. Their united weight was 2322 lbs. After feeding exclusively on beet-roots for fifteen days, their weight had fallen to 2158 lbs., so that they had lost seven and a half per cent. of their primitive weight. They were then found to be in so bad a condition as to make it prudent to give them their usual food. In the course of fifteen days, having regained four per cent. of their original weight, they were fed on potatoes for fourteen days consecutively. At the end of that time they had lost three per cent. By these two experiments the cows had each lost 164 lbs. and had become extremely thin, although supplied with food *ad libitum*. Thus, it appears evident, that beet-root and potatoes alone are not sufficient to nourish milking cows.

The diet of milking cows, says M. Boussingault, may be insufficient from different causes—1st. If it does not contain enough azotized principles to supply the place of the azotized principles eliminated from the economy; 2d, if it does not contain the carbon necessary to replace that which is burnt by the respiration or emitted by the secretions; 3d, if it does not contain the salts required by the economy; 4th, if it does not contain (according to views recently promulgated) enough fatty substances to supply the place of those

which are carried off by the milk and other secretions.

In the food given to the cows experimented on, the first three conditions were fulfilled, but the last was not, as the quantity of the fatty principles which it contained was much inferior to that which was found in the milk and dejections. Consequently, the food of herbivorous animals, says M. Boussingault, ought always to contain a certain proportion of substances analogous to fat, destined to assist in forming the fat of the tissues, and of the secretions. — *Ibid.*

LUMBAR ENTEROTOMY FOR IMPERFORATION OF THE RECTUM.

M. Baudelocque communicated two cases of imperforate anus, successfully operated on. The first case was that of a child, two days old, that had not voided any meconium. On passing the little finger of the left hand into the rectum, he found that it terminated in a cul-de-sac, about an inch above the anus. The member was ruptured by a sharp-pointed probe passed through a sound, and the meconium at once found a passage. In the second case, the child was also two days old, and the circumstances of the case were the same; but on pushing the probe through the membrane terminating the rectal cul-de-sac, the colon was not attained. M. Baudelocque determined, therefore, on practising the operation of lumbar enterotomy. The child having been placed on its side, a transversal incision, an inch in length, was made in the lumbar region. The aponeurosis of the external obliquus was divided, as were also some fibres of the quadratus lumborum, and the colon, which was found lying on a layer of fat, was then opened. A considerable quantity of meconium escaped, and the intestine was afterwards fixed by three sutures. On the fourth day a little erysipelatous redness appeared around the wound, and the child became feverish. Leeches were applied, the nurse was changed, and the child at once recovered. On the eighth day after the operation it was doing well. — *Ibid.*

INDIAN HEMP.

In the *Edinburgh Monthly Journal* are recorded a series of cases by Dr. Laurie, illustrating

THE PHYSIOLOGICAL AND THERAPEUTICAL EFFECTS OF INDIAN HEMP.

the following are the principal conclusions to which his experiments lead:—

1. It seems to belong to that class of

narcotics which rapidly induce excitement and intoxication, followed by sleep, neither sound nor refreshing.

2. In a full dose it acts powerfully on the heart, causing palpitations, and rapid, weak, intermittent pulse; and on the nervous system, producing delirium, coma, convulsions, and dilated pupils.

3. Its effects are generally transitory. In one case, however, the intoxication and dilatation of the pupils lasted nearly forty-eight hours.

4. It is a very uncertain agent, in some cases producing the most violent and seemingly dangerous symptoms, in others being nearly inert.

5. It very frequently causes vomiting, which, whether it occur spontaneously or from emetics, very speedily relieves its unpleasant, and perhaps dangerous effects.

6. Applied around the eye, it does not dilate the pupil.

7. It exerted little influence on the few patients to whom it was given in the form of enema.

8. He does not think it is a valuable addition to our narcotic medicines. In very few instances did it act as an agreeable soporific and anodyne; in none did it succeed when opium had failed; and in one case only was it preferred to opium.

9. So far from acting generally as an anodyne, its effect was so disagreeable, that the majority of those who took it once, only did so a second time on compulsion; and this is the more remarkable, as the patients on whom he experimented belong to a class to whom stimulants of all kinds are familiar, and who would greedily swallow opium and spirits to an unlimited amount.

10. It caused an immediate craving for food, and, in a few, permanently increased the appetite.

Dr. Laurie's experiments with the hemp as a curative agent are too few to entitle them to confidence. He has certainly underrated its merits. As a remedy in whooping cough alone it is invaluable, and though opposed to the extension of the already overgrown materia medica, we cannot refuse it there the place which its usefulness commands. — *Lancet.*

DETECTION OF OPIUM IN THE STOMACH SEVERAL DAYS AFTER DEATH.

By H. Letheby, M.B.

Lecturer on Chemistry at the London Hospital.

Samuel C—, aged fifty-six, of pre-

viously good health, died somewhat suddenly on the 17th of last September. There were some suspicions of his having been poisoned, and I received a notice from the coroner to be present at the disinterment of his body. He had then been buried twelve days. The corpse was considerably decomposed, of a dark, livid, green colour, and the abdomen distended with gas almost to bursting. The chest and its contents were perfectly normal and free from disease, but on opening the abdomen it was observed, that the whole course of the alimentary canal was highly vascular and congested, putting on a deep purple hue. The stomach contained about one ounce and a half of a thick, dirty, yellow fluid, but the intestines were quite empty, and, except at one small spot, free from ulceration.

A part of the contents of the stomach was boiled with alcohol, and then filtered; it gave a deep-red solution, which possessed the property of staining paper of a bright yellow colour, and this was not heightened by an alkali, while nitric acid changed it to a purplish green. Acetate of lead was added to the rest of the solution, and a copious precipitate obtained. The filtered liquid, when freed from lead by sulphuretted hydrogen, and evaporated nearly to dryness, gave with chloride of iron a greenish tint, and with nitric acid a bright red—two results indicative of morphia.

The precipitate was then diffused through water, and deprived of its lead in a similar manner, and evaporated until it was nearly dry; this gave with chloride of iron a blood-red colour, which was destroyed by nitric acid, potash, and protochloride of tin, but not by bichloride of mercury. It gave no colour with terechloride of gold, but white precipitates with lead and baryta. From these I inferred the presence of meconic acid, and my former tests indicated saffron; other reagents proved the presence of carbonate of lime, but I could detect no mineral poison in the stomach. The subsequent examination of the liver, however, gave indications of arsenic.

It came out, in the course of evidence, that the deceased had died with symptoms of dysentery, and that aromatic confection, with opium and chalk, had been administered.

The chief feature of the case is, that the constituents of opium may be detected some time after death. It is also a point of consideration that the inflammatory condition of the small intestines, together

with the vomiting and purging, and the absence of any considerable ulceration, and the sudden coming on of the attack, are indicative of something more than dysentery. There can be no doubt of his having died from extensive inflammation of the intestines, and in all probability the cause of this inflammation would have escaped notice but for the examination of the tissues.—*Ibid.*

MEDICAL CLINICS IN THE NEW ORLEANS CHARITY HOSPITAL.*

A great variety of diseases, some of infrequent occurrence in this latitude, have been received for treatment in the medical department. The field for clinical instruction is most ample; and we are pleased to find the Professors of the College zealously engaged, three or four times during the week, in delivering clinical lectures to the medical class. Practical knowledge of this kind cannot be too highly appreciated, and we rejoice to see that this branch of a medical education is now no longer neglected in any part of our own country.

From every part of the civilized world, we receive patients, bringing with them, as they sometimes do, the diseases of their own latitudes, modified by our own. In addition to this importation of disease, from a great variety of climates, &c., we have our own, which may be said to differ, in some respects, from all others. Such an array of disease must court investigation, and we accordingly find many of the physicians of the city almost daily in attendance, each watching the progress of particular diseases, and we notice that the practical knowledge of the stethoscope is cultivated with more than ordinary industry. Hence the diseases of the chest, of which we have a great number, are studied with enthusiastic ardour; and it is doubtless on account of our better acquaintance than formerly with the benefits of auscultation and percussion, that we have found many cases of phthisis pulmonalis this winter, than, perhaps, on any former occasion. Each physician now walks the wards, stethoscope in hand, and when any chest-symptoms are suspected, the case is thoroughly examined, and the diagnosis written on the patient's ticket.

From present indications, we are disposed to anticipate better days for the profession in our city, and corresponding good

* New Orleans Medical Journal, for January, 1845.

for the public. May these days be near at hand! We can only make room for the following cases.

CASE I. *Hepatic and Cerebral Abscess.**—

On the 8th of October, 1844, Robert L. aged 55, was admitted into the Charity Hospital, under the care of Dr. Rushton. This man had dark hair and eyes, a sanguine temperament, and had been for several years an habitual drinker. The following symptoms were observed: countenance sallow and shining; eyes dull and drowsy; face and head bathed in perspiration; tongue dry and red, marked with longitudinal and transverse fissures; partial deafness; great thirst, colliquative diarrhoea, which resisted the combined action of opium and the acetat. plumb. Abdomen greatly distended, equal in size to that of a woman's, at the full period of utero-gestation. Percussion over the right hypochondrium elicited a dull sound, and a sense of fluctuation in the abdomen. His breathing was difficult and prolonged; the impulse of the heart feeble; the right hypochondrium was more prominent than the left; hence Dr. Rushton concluded that the liver was enlarged; but as the symptoms which usually characterize acute hepatitis were absent, he diagnosed passive engorgement or congestion of the liver. Yet on a more thorough examination of the case, and taking into consideration the state of the tongue, the partial and profuse sweats, the obstinate diarrhoea, thirst, his sallow complexion, &c., Dr. R. suspected the existence of an abscess deep in the substance of the liver; but the most certain sign—fluctuation, being absent, this diagnosis was equivocal. During the last eight or ten days of his life, he had daily attacks of delirium, which became more prolonged as he approached the dead-house. His urine was alternately dark and clear; the ascites was removed by the use of diuretics, such as squilla, digitalis, potash, juniper, spirits, nitrous ether, &c. The excessive irritability of the stomach and bowels was allayed by the internal use of the camph. mist. and medicinal cyanhydric acid. He was seized with convulsions and expired.

Inspectio Cadaveris. Brain.—Sub-arachnoid effusion, and also considerable opacity, in patches, of this membrane. In the posterior part of the right middle lobe of the cerebrum, a circumscribed abscess was discovered; all the sinuses were loaded with blood; the lateral ventricles were

filled with a pale coloured serum. **Lungs.**—These organs were healthy; heart stuffed with coagula, and loaded with adipose matter. **Liver** double its usual size and of a dark slate colour. Cutting into the right lobe, which was buried under the ribs, to the depth of two inches, a large quantity of *pus* mixed with shreds of membrane, escaped from a cavity in the centre of this organ, capable of holding about 32 oz. of fluid. As the matter was making its way towards the diaphragm, near which it was situated, it is highly probable that in the course of time, it must have been discharged into the cavity of the chest, and then been expectorated; but death put a period to the *vis medicatrix*. The gastric mucous membrane was injected in patches; but the intestinal mucous surface was unusually pale; the spleen was loaded with blood, easily lacerated, and three times its natural dimensions. Bladder empty.

REMARKS.—It is easy to perceive, by perusing the history of the above case, that nothing short of a post-mortem inspection could have revealed the true nature of the various lesions in this instance. In the first place, the ascites masked in a great measure the true condition of the abdominal viscera, especially the liver, an organ whose structural changes are not always characterised by those violent and obvious symptoms, which mark the progress of organic disease in many other viscera, whether of the chest or abdomen. In the second place, the abscess was deeply seated in the substance of the liver, consequently extremely difficult to detect. But the main feature to which we would direct attention in this case, is the existence of an abscess in the liver and brain at the same time; but we have no means of ascertaining which of the two is antecedent. Blows on the head will, it has been said, produce abscesses in the liver; on the contrary, may not injuries and certain diseases of the liver react *pathologically* upon the brain?—**ED'RS.**

CASE II. *Hypertrophy of Spleen.*—Joseph Jobbard, a native of Missouri, aged twenty-four years, six months in New Orleans; sick two months, entered Charity Hospital, November 4th, 1844, and died November 5th. For several years he had resided on the banks of the upper Mississippi river, where he had a protracted intermittent fever. For the last six months he has lived in this city, and during this time he was treated in the Charity Hospital for his old complaint, the intermittent

* We are indebted to Dr. Rushton for the facts of this case.

fever. At the end of two or three weeks he was discharged better, but his chill returning, complicated with diarrhoea, he applied and was again admitted into the hospital for treatment. He presented the appearance of one worn down by dissipation and disease, was very pale, flesh flabby and soft, frequent and feeble pulse, great thirst, diarrhoea, pain in abdomen, but no heat of skin or other evidences of fever. On applying the hand to the abdomen we were astonished to find this cavity filled with a large solid body. We could trace the outline of this body as far as the right crest of the ilium, near the pubis, and giving such a contour to the abdomen as, usually characterises a woman six months advanced in pregnancy. We were, however, satisfied ourselves that this body was none other than a spleen of extraordinary size. His diarrhoea, ingrafted upon a system worn down from dissipation, together with his feeble pulse, cool skin and colder extremities, led us to order brandy and opium. He died during the night.

Next morning the body was opened and a spleen of extraordinary dimensions occupied almost the entire abdomen. We made an accurate measurement of this organ, and we give the following items:

| | |
|--------------------------------|---------------|
| Length, | 17 inches. |
| Circumference, | 23 1/2 do. |
| Diameter in the thickest part, | 5 1/2 inches. |
| Weight, | 12 1/2 lbs. |

It maintained its normal shape and outline; its structure was firm and more solid than in a physiological state; it was of a bright hepatic colour, and bore a striking resemblance to ordinary healthy liver. Its growth must have been gradual; it had evidently long been the seat of a fluxionary movement, being perpetuated by repeated attacks of intermittent fever. It is clearly a case of hyper-nutrition, which was carried on at the expense of the general system; for his body was much emaciated, and all his other viscera, except the liver, were greatly attenuated; stomach small and contracted; liver of the usual size and healthy colour, left lobe more in the left hypochondrium than usual. H.

BULLETIN.

Philadelphia, February, 1845.

To Authors.—Owing to an overestimate of the space left for articles of this description, we are compelled to postpone an dry Bibliographical Notice and, among others, those of Dr. Oliver's Edition of Dr. Williams's *Treatise on Diseases of the Respiratory Organs*, which is a good book, and Dr. Reese's *Medical Lexicon*, which is quite the reverse. It is our wish to do more than to acknowledge the receipt of the Introductory Lectures of our esteemed friends, Drs. Bacha, Darrach, Payne, Drake, and Condie. A reprint of Mr. Chadwick's Report on the *Practice of Inoculation in Towns*, is also on our table: it will be noticed more particularly in our next.

To our venerable *confrère*, Dr. Caldwell, the Ajax Teton of physiology against the direct attacks and wily stratagems of transcendental chemistry, we owe in a more especial manner an apology, both for not noticing before now his Letter—"The Replier Replied To, and The Reviewer Reviewed:" and still more his kind private communications. Our agents must be found in that of the mill-horse, going his incessant and weary round, without time or opportunity to extend his range of vision, or to enjoy variety of locomotion.

We have not received the second part of *Copland's Dictionary of Practical Medicine*, nor the second number of the *American Journal of Insanity*. If publishers of a great work, such as a Dictionary in Paris, attach importance to the notices of medical journalists, they must be aware that this can only be predicated of the regular receipt of the several Parts as they are issued from the press. A Number or Part, now and then, as a specimen, or memento, will not answer. As respects the occasional interruption in the arrival of journals, we can readily understand how this may very undesignedly happen.

The delay in the issue of the *Select Medical Library* for January will be attended with a compensating advantage to its numerous readers, in enabling us to place before them the standard and unsurpassed work of Dr. Christison on "Poisons." Immediately on the receipt of a copy of the fourth edition, which we have been expecting for the last twelvemonth, it was put to press. It will be brought out at an early date, in place of another work, in the printing of which considerable progress had been made. We mention these circumstances, both as apology for delay in the issue of the expected number of the Library, and as evidence of the earnest desire of both editor and publishers to exert themselves for the proper gratification of its subscribers.

Reference at this time may not be inappropriately made to the volume of Bampffield on *Curetaures and Diseases of the Spine*, with which the Library has been recently enriched. It supplies a want sensibly felt by the general practitioner, to whom no good American publication on the subject was accessible. The notes appended by our friend, Dr. J. K. Mitchell, though brief, are to the point, and convey a good lesson, even, by their omissions, as implying that these are of topics that do not merit attention for available purposes.

Recovery of Galen's Lost Books of Anatomy.

Medical lore will derive an important accession to its stores from the *discovery of the nine missing books of Galen's principal anatomical work*. A correspondent of the London Medical Gazette gives the details on the subject, of which the following is a summary. Galen's work *Περὶ Ἀνατομικῶν Ἐργασιῶν, De Administrationibus Anatomicis*, consisted originally of fifteen books, of which only eight and part of the ninth have come down to us. The last six treated of the eyes, tongue, œsophagus, larynx, os hyoides, the nerves belonging to these parts, the veins, the nerves arising from the brain, those arising from the spinal marrow, and the organs

of generation; so that Galen's account of several of the most important parts of the body is contained in the lost books. Our present knowledge of these six books must now, however, come through an Arabic translation, of which there are two copies in the Bodleian Library at Oxford—one, of the whole fifteen books; the other, a copy from this of the last and hitherto lost six books. The original MS. (Arabic) is written on oriental paper and by an oriental scribe, and contains the complete work of Galen. It was bought at Constantinople for forty-eight florins, but by whom is uncertain; nor is anything known of its history, except that it once belonged to Narcissus Marsh, Archbishop of Dublin. It was seen and used by Golius, a celebrated Arabic scholar at Leyden, who must have known that the Greek copies of the work contained only nine books, and accordingly he copied the remaining six with a view to publication. "He did not, however, transcribe the remaining ninth book, which is wanting in the Greek copies, and which is about twice as long as the portion hitherto known in Europe." The MS. was either given as a present by Golius, or bequeathed as a legacy at his death in 1667, to Thomas Bartholinus, the elder, Professor of Anatomy at Copenhagen, and it was in his possession in the year 1672, when he wrote his work *De Libris Legendis*. It is probable that after his death it came into the possession of Archbishop Marsh, from whom it passed, either by gift or legacy, to the Bodleian Library at Oxford, where it still remains; together with the original MS. from which it was transcribed.

The Works of Paulus Ægineta.

The Sydenham Society, in continuation of its useful and meritorious labours, has, quite recently, issued the first volume of the works of the celebrated Paul of Ægina, translated and edited by F. Adams, Esq.

Paul was born in the eighth century, but the precise year does not seem to

be well known. It is supposed that he received his medical education at the School of Alexandria, which continued to flourish for a considerable period after the capture of the city by the Arabs. Be this as it may, it is better ascertained that Paul travelled into many countries in quest of improvement. If we cannot admire him as an original author, there is, however, this much to be said in his favour, that, as a compiler, he has preserved for us details of opinions and practice of the ancients, which would otherwise have been lost. His chief distinction was in the practice of surgery, the account of the various operations in which, in his sixth book, is the best treatise on the subject anterior to the revival of letters. Paul of Ægina was the first who has left behind him a treatise on Midwifery, and hence he has been called *Paulus Obstetricius*, or Paul the Accoucheur, by the Arabians.

The MEDICAL EXAMINER comes to us enlarged and in a monthly form, well dressed in good paper and clear type. The contents of the first number, or that for January, of the new series, are varied and instructive. The work continues to be published by Lindsay & Blakiston, and to be edited by Dr. R. M. Huston, to whom we would say, in the expressive if not over-elegant vernacular — "go ahead!"

BIBLIOGRAPHY.

Horner's Medical Topography of Brazil and Uruguay.*

Sigaud's Climate and Diseases of Brazil.†
To physicians and surgeons in the

* Medical Topography of Brazil and Uruguay, with Incidental Remarks. By G. R. B. Horner, M.D., Surgeon U. S. Navy, Honorary Member of the Philadelphia Medical Society, and Corresponding Member of the National Institute at Washington. Philadelphia. Lindsay and Blakiston, 1845. pp. 296, 8vo.

† Du Climat et des Maladies du Brésil ou Statistique Médicale de cet Empire. Par le Docteur J. F. X. Sigaud. Médecin de Dom Pedro. Paris. 8vo. pp. 592.

maritime and military services, the profession has been largely indebted for contributions to a better knowledge of climatic influences, general etiology, and improved treatment of some of the worst varieties of disease. The mere mention of the names of Cleghorn, Lind Clark, Blane, Johnson, McGrigor, Hennen, Larrey, and Broussais, father and son, will call up to the memory of the well-informed reader many instances in proof of this assertion. Dr. G. R. B. Horner, both in the work now before us and in another on the Topography of the Mediterranean and the countries around it, which latter it was our good fortune to publish in the *Select Medical Library* about five years ago, is following, praiseworthy, in the steps of his illustrious predecessors just named. His own example must be productive of good fruits by inciting others in the public service to useful and continuous observations and record of whatever is most noticeable on ship and shore, during the period of their cruises, by which at different times they are introduced to all climes, and fashions of people and society.

In addition to his sketches of the medical topography of Brazil and Uruguay, Dr. Horner introduces a deal of pleasant chat on the scenes and incidents with which his position, as a professional and official character, made him acquainted. From talking of climate and diseases, the author passes to a consideration of hospitals and medical schools, and thence occasionally to a notice of days of reception and evenings of balls and music; so that his volume is readable not only by the professional man but by the general student who is intent on acquiring a knowledge of foreign lands and the diversified phases of society, which they exhibit.

We shall convey a better idea of the nature and contents of Dr. Horner's work by a few extracts than by an enumeration of its prominent heads, and therefore proceed to notice, first —

THE POPULATION OF BRAZIL.

"Here I will leave the inferior grades of

animals of Brazil and speak of the most exalted — man — immortal man — the sovereign of all other beings. Perhaps in no other country of the world is a greater variety found. He there differs in form, constitution, colour, and habits, and has many intermediate qualities. The highest grade of the Brazilians is the Circassian — either genuine or crossed with Moorish blood: the lowest grade is the African; and the intermediate the Indian, who, in physiognomy and complexion, approaches the Chinese and Tartars. These three grades have been commingled in a hundred ways, and thereby formed the numerous class of mestizos or mongrels, and mulattoes. Enumerated with the pure Africans and Indians, they may be estimated at 3,500,000, or more than three-fifths of the entire population of the empire, calculated to be 5,500,000 souls. The remaining 2,000,000 of this number are composed of old Portuguese, their descendants, and other Europeans, by birth or extraction.

"According to the census of June 22d, 1831, the population of Brazil — 5,035,000 of which number there were 3,035,000 free persons, and 2,000,000 slaves, the greatest number of whom were in the southern provinces. The respective free population of all of them was the following:

| | |
|--|-----------|
| 1 In Rio Grande do sul | 180,000 |
| 2 In Santa Catarina | 35,000 |
| 3 In the province of Rio de Janeiro, inclusive of the district of Campos | 320,000 |
| 4 In São Paulo | 270,000 |
| 5 In Minas-Geraes | 600,000 |
| 6 In Goyaz | 50,000 |
| 7 In Mato Grosso | 30,000 |
| 8 In Espírito Santo | 40,000 |
| 9 In Bahia | 40,000 |
| 10 In Sergipe | 50,000 |
| 11 In Alagoas | 100,000 |
| 12 In Pernambuco | 400,000 |
| 13 In Parahiba | 100,000 |
| 14 In Rio Grande do Norte | 30,000 |
| 15 In Ceara | 150,000 |
| 16 In Piahy | 70,000 |
| 17 In Maranhao | 120,000 |
| 18 In Para | 110,000 |
| Total of | 3,035,000 |
| Total of slaves | 2,000,000 |
| | 5,035,000 |

"In Ceara, out of a population of 150,000, only 100,000 were slaves; but in Rio Bahia and Pernambuco, they exceeded the freemen in number and in other provinces they are quite as much if not more in the minority, although every slave has the right to purchase himself at a fair valuation."

MEDICAL FACULTY OF BRAZIL AND EXAMINATION FOR A DEGREE.

"To continue my remarks on the faculty of the school, I will observe that they exercise entire control over the students within the pre-

cepts. Should one of them during a lecture at another time disturb the peace, the professor can command silence; if he should not obey, the order is repeated at the same moment that the offender is called by name, and pointed at. Should this be insufficient, he is commanded to retire, or the professor leaves the hall and reports him to the director. Besides penalties incurred immediately for misconduct, the students are liable to undergo others at the end of the session. At this time, any professor and substitute is required to present to the faculty a tablet of observations made on the conduct of students, and to confirm them by facts. The secretary keeps these tablets in the archives, where they are not allowed to be examined without the consent of the director, and are retained for the use of the faculty and government when occasion may require. The faculty themselves are liable to punishment for misdemeanors, such as offences against public morals, neglect of the public duty, and conduct notoriously scandalous and compromising their honour. A professor, for instance, who three successive times, and without the consent of the director, or without just cause, should fail to discharge his duties by not lecturing, is liable to be brought before the academical council by the director or three professors, and to be fined in a sum equal to his salary during the days he has not performed his duties.

"The statutes with respect to students are precise. Offences are strictly defined and severely punished when aggravated; and for the infraction of the students the penalties to be incurred are written down opposite acts pronounced offences. Thus, non-attendance at a whole lecture incurs one point or mark from the professor or substitute in the chair, making a noise, especially during a lecture, incurs one or two points; non-attendance to an examination is noted down, and punished by the offender being examined last, and fined ten milreas; departure before the end of a lecture and scholastic exercises requires an explanation, and receives one point from the professor present; irreverence, tumult, lampoons, caricatures, obscenity, acts of cruelty towards the patients, offences against public morality or modesty, libels, disobedience to the orders of the director, mockery and ridicule of the professors, substitutes, or attendants of the school; any attack whatever on them, any marked insubordination, affronts to fellow-students in the precincts of the school or without them, are punished by points and reprimands, and by temporary or permanent expulsion from the school, after the government has been informed of the circumstances and has given its approval.

"At the end of each session, the candidates for the diploma, after compliance with the forms required, the payment of the fees, a medical thesis, written and printed for distribution, are examined in rotation. I happened to visit the school just as a candidate was before the faculty. He was a very genteel looking and

Intelligent young man, dressed in a handsome suit of black, with a white muslin cravat, fresh from his laundress. He sat in a small, boxed-up pulpit. Behind and above it was a larger one, overhung with red and blue damask, covered by scarlet silk, and occupied by the president. Before the pulpit, on a semicircular bench, sat the five examiners; one of whom was a smiling, sensible, middle-aged man, with a curly head, and a complexion indicative of his being not over a fourth white. A few questions only were put, and yet so much was said by both the candidate and examiners, that they appeared to be engaged in a discussion. The thesis was the subject of most importance before them: the examiners questioned the young man to his heart's content for an hour and a quarter; got him into a profuse sweat, though nearly as pale as a corpse. They then let him go out into the library, where he remained, taking breath, and applying his white cambric handkerchief in such a manner that he might have been taken for some youth just from a hall-room, where he had been flourishing in a waltz amid a crowded assembly."

ELPHANTIASIS.

"Elephantiasis exists in every form and degree: spares no sex, age, nor condition; pays no respect to natives or foreigners; affects the poor and rich; harasses servant and master; affects the plebeian and patrician. The poor and labouring classes, however, are most annoyed by this disease; and the negro population, both the slaves and free portion, have a full share. The persons most affected with elephantiasis, strictly speaking, and according to the derivation of the name, are those who live miserably, or are obliged to make much use of their feet, and have them frequently, and for a long time, exposed to the sun without shoes or anything else to protect them. One of the best evidences of this fact was, that I knew a sailor to bring on a violent inflammation and swelling of his feet similar to elephantiasis from such exposure. Had the irritation been kept up, I have little doubt a chronic affection would have been induced, and a permanent enlargement taken place. I have observed, also, that the labouring class of people, particularly men who stand or walk much, and women who are in the habit of washing clothes and immersing their hands in hot water or other warm fluids, have them or their forearms affected.

"Of the pathology of elephantiasis, it may be well for me to make a few remarks, and first of its causes. The chief remote, ones at Rio is, without doubt, the heat and moisture of the climate, rendered more injurious by the miasmas and impurities without and within the crowded city, situated chiefly in valleys overhung by high mountains, and divided by hills. That these are the most efficient causes is proved by the acknowledged fact, that since John VI. came from Portugal, lived at Rio, and drained, cleaned, and otherwise freed the city of noxious substances, the disease has declined

considerably. The luxury and indolence of the people, and the general relaxation of their systems, from climate and other debilitating agents, may likewise be mentioned as remote causes. The exciting are, heat directly applied to the parts, and different irritating things put upon or lodged in them. Of the latter, chigoes may be called the most common and efficient among the slaves and other people who are in the habit of leaving their feet uncovered. Erysipelas is one of the exciting causes, according to some of the most respectable native physicians; and when this attacks the scrotum it becomes enlarged very rapidly: but this erysipelas is probably brought about by the same causes, primary and secondary; and as it affects the same tissues — the tegumentary and cellular — it may be looked upon as a mere premonitory symptom of ordinary elephantiasis, or that attended with increase of substance in the parts diseased. That attended with a decrease of it is called Greek elephantiasis or leprosy — as said when I spoke of my visit to the hospital appropriated to it, and is of a less acute kind — is slower in its progress — and though the parts are seldom much enlarged; without doubt is owing to the same causes in most instances. The chief difference, in the two forms of the disorder, consists in the action of the absorbents and capillaries. These, in common elephantiasis, extol and add to the parts; but in the leprosy kind, the former take up and carry off, first the cellular, serous, fibrous, and other soft tissues, and then the osseous. That this is the true difference, is satisfactorily proved by what is to be seen in the patients affected in the hospital; where the same person, nay, the same part of the body is affected with both kinds of the disease. For instance, the legs may be seen enlarged — the lips most unnaturally increased, while the toes and nose are wasting away, if not already totally absorbed. That this phenomenon should occur, is not more unaccountable than the formation of a fibrous, cancerous, or other tumour, while in the same person an ulcer should be devouring the soft tissues, or a caries be destroying the hardest bones.

"Of the two forms of elephantiasis it is not easy to say which occasions the most inconvenience to the sufferers: for one lops off his members, the other enlarges them to an enormous extent — and both deprive of the means of obtaining a livelihood; one by a deficiency, the other by an excess. A seamstress and shoemaker lose their fingers by one form of the disorder; a footman and porter have their legs and scrotum so much increased by the other, that the former can only stand and the latter has as much as he can carry about his own person. A belle, ambitious of having the smallest of feet — the most delicate of ankles — has them converted into stumps, or such heavy clubs, that all elasticity of gait is destroyed; and so far from dancing well, cannot walk with common grace. A beau, desirous of displaying his finely-formed features, and causing every belle to look with admiration at his noble Roman nose — his

proressively dark eyes — him the former converted into a genuine pug, or insignificant Grecian; and only one of the latter is left to view the ruins of the once sublime bridge, and the extinction of its fiery fellow orbit.

"Cases of scrotal elephantiasis are nearly as numerous, if not quite as much so as those of the feet; and the first attain the greatest magnitude of any other form. One or more instances have occurred where it was so large that a wheelbarrow was requisite to carry it; and two cases I saw of it were about four feet in circumference. One of them was that of a negro, in the Misericordia; another that of a late officer of customs, who resides in the *Ruadas Buzotes*, or Buzon's street, which takes its name from the number of such persons residing on it. Don Francisco H. C. — had been afflicted with the complaint only three years, and he, nevertheless, had the scrotum formed into a vast tumour of nearly the natural shape of the part. The skin was quite firm, smooth, of a reddish-white colour, and felt soft, but was firm and elastic; the prepuce spread out six or eight inches around, and divided into irregular lobes, semitransparent, fungous, and entirely concealing the glans. This was embedded in the mass. His feet and legs just above the ankles were correspondingly enlarged. The first were too big for shoes, and protected by mocasins; the second were bottle-shaped, and a linen sac supported by straps held the unwieldy scrotum. Don Francisco is no longer able to obtain a livelihood by labor, and receives alms privately. His age is fifty-six years; and as his chin and face are becoming affected more and more, he must expect to spend the rest of his life in misery beneath the weight of his irremediable disease."

Uruguay, of which Montevideo may be regarded as the chief city, is pleasantly sketched by Dr. Horner.

DISEASES OF URUGUAY:

"Without the exception of any part of it, Uruguay is a country of much salubrity. It is singularly exempt from fevers and other complaints caused by malaria; bilious, remittent, and intermittent fevers are scarcely known, and in the capital are said not to exist. Exemption from these diseases may be properly attributed to the want of marshes, swamps, and stagnant water, the undulating face of most of the state, and the dryness, if not the singular composition of the soil, and the nature of its productions. Rank vegetation is seen no where, and plants as well as dead animals parch up but do not putrify.

"A form of typhus fever, termed *febre cerebral* by the citizens, prevails sometimes at Montevideo, and in 1838 destroyed many of them treated after the ordinary method pursued there. Venesection proved a fatal remedy, and Dr. Gardaret, convinced of this fact, forbid it altogether, resorted to less debilitating means, and acquired great celebrity by his uncommon suc-

cess. I was told by a member of a family in which he was employed that he excited thereby great jealousy among his professional brethren, and from misrepresentations about him he was put in prison, and when let out forbid to practice until by the efficacy of his prescriptions to patients who flocked to his house, as he could not go to their residences, he convinced the public of his merits. He was then permitted to practice again wherever called, and now enjoys both a high reputation and a full purse.

"The exanthematous fevers are occasionally prevalent in Uruguay. Scarlatina from time to time has been exceedingly fatal among children, but from what I have observed would have been far less so under good treatment. The disease often is allowed to run its course without restraint, or only with that of trifling remedies, from a vulgar notion that it is best to let it alone. Small-pox is the most destructive of the exanthemata, although a vaccine society supplied with virus from London has been established for a long time. Last year the disease pervaded every class of the inhabitants, particularly the *Bikotyans*, and other ill protected emigrants. Many of them died, from 20 to 30 a day, and before the first of September it was estimated there had been 700 victims to the disorder. That it should be so destructive is not surprising, for no quarantine regulations exist for its prevention — there is no hospital, no lazaretto for patients who arrive afflicted with it; and I have heard of a female who was permitted to land on the large, ever crowded mole in front of the city and go where she wished without the least restraint. Whooping-cough is sometimes epidemic, and several years since caused many deaths. Catarrh, pneumonia, phthisis pulmonalis, occur frequently in the winter, and chiefly among the indigent, who are badly provided with clothes, are exposed to the inclemencies of the weather, and inhabit damp, open houses, unprovided with fire. Some of the opulent suffer from these diseases, ascribable to the last named cause. Few of their houses have chimneys, and still fewer are well warmed. Fuel of every kind, save beef bones, is scarce and dear; most persons cannot afford to use for any other purpose than to cook; the climate is generally too mild to require fire, and it is not freely used by any of the natives, with the exception of those who have adopted the habits of foreigners from the northern hemisphere; but many of these have grates in their dwellings, and employ wood and coal economically. The former fuel comes from the country and is principally of peach wood; the latter is brought from England.

"Among the poor another disease is caused by the scarcity of fuel — I mean a species of dysentery, brought on by ill-cooked beef, almost their sole article of nourishment; but I am of opinion that the disease must be somewhat owing to its unwholesome quality, for nearly all the cattle killed to make jerked beef, both the *chaque dulce* and *salado*, — the sweet and saked, — and to supply the fresh eaten by the

mass of the inhabitants, are penned up in stockades for days before slaughtered, without being given a particle of food or drop of water. Moreover, as the cattle are crowded so thickly that they can barely stand or lie down, disease of necessity must be generated in their famished bodies — fever, of an inflammatory, if not contagious form, must be created, and their flesh tainted too much to be innocuous in the human stomach."

"The complaints to which the Uruguayans are peculiarly subject, are piles, fistula in ano, aneurisms, and hypertrophy of the heart; all of which are thought to be caused and increased by their excessive riding on horseback. But we may also ascribe some of the cases of aneurism to predisposition, such as that at Buenos Ayres among the descendants of Indians and negroes who have intermarried. These people, more than all others there, suffer from that complaint, and the number affected with it is absolutely incredible, for I have heard of sixty being at the same time in one hospital.

"The Gauchos of Uruguay suffer most from the above diseases, because of their being ever mounted, and giving their bruised and agitated parts no time to recover. Dr. Peixoto, on the list of his patients, showed me the names of twenty-seven who were affected with aneurisms and hypertrophy. He states that fifteen out of twenty of the patients he treats are more or less affected with them; and though his calculation be extravagant, the best evidence can be had that these diseases are extremely common among the Uruguayans of the country.

"Crews of men-of-war in the river, agreeably to my observation and that of other medical officers of the navy, are liable to pulmonic affections, and patients suffering from them have them quickly aggravated after their arrival. These facts were demonstrated each time the Delaware went to Montevideo, and rendered more evident by the relief the patients obtained soon after the vessel left the place and got to sea. The greater coolness of the air may produce or aggravate the complaints mentioned, but its very great dryness as well as dampness at certain times, and something peculiar in its composition, ought, perhaps, more to be blamed."

Some lithographed drawings — views of some of the places visited by the squadron, and also of objects of natural history — enable the author to render his descriptions more complete, and contribute to the attractions of the work.

Dr. Sigaud's volume on the *Climate and Diseases of Brazil*, or *Medical Statistics of this Empire*, is brought out in a style becoming the physician to Dom Pedro II.; and in its glossy

paper and fine large type, contrasts most pleasantly with the majority of French medical works.

The author, in his Introduction, points out the chief geographical features and extent of Brazil, with its two hundred and fifty thousand square leagues, being nearly a thousand leagues from north to south and the same from east to west. Inestimably rich in mines and fertility of soil, and with a fine climate and gorgeous and various vegetable productions, it has been called by some of the specialists of the day the land of promise.

The work of M. Sigaud is divided into four sections, viz. — 1, On the Climate; 2, The Medical Geography; 3, Intertropical Pathology, and 4, The Medical Statistics of Brazil. The climate varies not only with the distance from the equator, but is modified by the maritime exposure to the east, and the extensive plains of Rio Grande and Uruguay to the south. The thermometer at Rio de Janeiro has been as high as 100° F., though its usual maximum in summer is about 92° F.: its mean at this season is 80° and minimum 78° F. In the coolest months — of May, June, July, and August (the reader will remember that we are now speaking of a portion of the southern hemisphere) — the range is from 68° to 77°; 65° to 71°; 64° to 73°; and 63° to 76°. Rains are frequent and copious at certain seasons in Brazil, and contribute a large share to the production of intermittent fevers in some districts. The modifications in the electrical state of the atmosphere, manifested often by violent storms, are very great, and productive of fearful destruction. The prevailing winds in the maritime regions are the north-east and south-east monsoons. The *pampero* is a dry, cold, driving wind from the south and west; it is of short duration. Hail is sometimes met with, snow never. The section on climatology is sketchy, and wanting in methodical description and detail.

The next, or that on the medic

geography of Brazil, contains notices relating to food and acclimation. English habits are acquiring an ascendancy in Brazil. They are alleged by the author to be more comfortable (*comfortables*), and are already fully ingrafted on the usages of the inhabitants of the larger cities. Fish is abundant and constitutes the chief aliment along the coast and the estuaries and banks of the rivers. In the mines, black beans and pork are the principal articles of food: dried meat and salt fish are those of the working classes generally. One of the effects of the prevalence of English tastes is the greater consumption of tea, beer and wine. More than a thousand boxes of tea and twelve hundred pipes of port wine are annually consumed or sold in Rio de Janeiro. Water is still, however, M. Sigaud informs us, the preferred beverage, with which the people gorge themselves after a meal, owing to their large use of spiced food, or that seasoned with pimento. Many of the initiated sip instead coffee or tea, and in the south, *maté* (*Ilex Paraguariensis*). The introduction of ice was, we are told, quite opportune, to moderate the increasing fondness for fermented, heating, and spirituous drinks. In 1834, the American ship Madagascar brought a cargo of ice, collected near Boston. There arrived; afterwards, successively, a number of vessels for the supply of Pernambuco and Bahia. In a short time, the use of this article was established: medicine turned it to good account, and the cargoes of ice procured from the state of Maine, from the Kennebec and the Penobscot, are consumed alike by the amateurs and the sick. M. Sigaud — who does not appear to have had any personal knowledge of the influence of temperance societies — thinks that ice-water is a far more powerful corrective than “sermons of methodists and the advice of American reformers.” Though we are not inclined to look on ice in the light of a panacea, it is, we cannot but believe, a better aid to temperance and more adverse to the acquiring habits of drunkenness than the drinking — even

though it be moderate — of wine, which some, in the plenitude of their benevolence and philanthropy, would fain persuade us is the way to root out the evil of whiskey and brandy and gin tippling. This opinion is, theoretically, too homœopathic, and practically, too unsuccessful, to win the confidence of those who, putting aside speculations and abstractions, look at the real workings of things.

Touching acclimation, M. Sigaud, among other observations, has the following: “The reverend fathers, the Jesuits, subjected novices arriving from Europe to a regimen: at first a blood-letting, baths, a vegetable diet to diminish their strength, then the use of purgatives at the return of hot weather.” The author thinks that this course is worthy of imitation in the case of young persons arriving in Brazil. He quotes Acuna, who says that “on the Amazon river, neither the sun nor dews are hurtful; at the beginning of our voyage, those who came from cold climates were either cured of the fever or prevented from contracting it by three or four bloodlettings.” Children from Europe are with difficulty acclimated. The mortality is great among robust subjects — sailors, labourers, soldiers — after excesses, which bring in their train malignant fever and dysentery.

In the first summer, the newly arrived from Europe feel the heat less than during the second one — a curious fact, which is paralleled by the known facility with which persons from hot climates bear the extreme cold of northern latitudes during the first winter of their residence in the latter. Among the measures of precaution recommended by M. Sigaud for acclimation, are, wearing of flannel next the skin, and the substitution of tepid bathing and of acidulated drinks, or those cooled by ice, for the cold bath and spirituous drinks. The bowels should be kept free by Seltzer water and gentle laxatives. Calomel and Seidlitz powders are thought well of as a means of salutary purgation at the change of the seasons; but

not as a means of curing dyspepsia or obviating the effect of excesses of the table.

We must pass over the chapter on *Diseases of the Indians and the Medical Practice of the Jesuits*, to reach the *Diseases of the Blacks*, of which our notice will be short. Among the evils of the traffic in slaves have been the spread, along the maritime parts of Brazil, of scurvy, psoriasis, ophthalmia, small-pox, pian and dysentery; and from the condition in which the slaves are placed—so adverse every way to sound hygiene—are developed the elements of diseases peculiar to them; such as lepra leontina, stomach diseases, and lesions of the cerebro-spinal system. Tetanus, both idiopathic and traumatic, trismus and epilepsy, infantile or seven days tetanus, stomach disease, or gastralgia, are common diseases among the negroes. Pulmonary phthisis and chronic pleurisy may be placed foremost among the diseases of the viscera. Cachexia Africana, or that morbid state of the digestive apparatus manifested by, among other symptoms, a depraved appetite for lime and plaster and even dirt, is common in Brazil. Of the skin diseases, itch, lepra, and pian, are the most common.

The endemic diseases of Brazil are goitre, erysipelas, pian, hydrocele, lepra, hemorrhoids, and intermittent fevers. Among the epidemics, which have appeared at different times in this region, M. Sigaud enumerates small-pox in 1834 and 1835, influenza (1835), congestive fevers (1835), scurvy, typhoid fever (1836), measles, hooping-cough, bronchitis, dysentery, ophthalmia and scarlatina.

In the third section, on Intertropical Pathology, M. Sigaud treats of those several diseases in succession. The intermittent element prevails, he tells us, in the greater number of the diseases of countries placed beyond the range of the action of marshes. It exists, he adds, in all the diseases, whether acute or chronic, of the regions in which the paludal infection is met with, concealing

itself sometimes under the form of gastro-cerebral fevers, sometimes with the symptoms of pneumo-thorax. Myelitis and hydrorachis are occasional effects of congestive fevers. Sulphate of quinia for the last twenty years has been the salutary remedy in the treatment both of acute fevers and of cachexia or marasmus resulting from the slow and concealed operation of miasm. Before this time, cinchona and its various preparations were in repute. The quinine is given indiscriminately in the paroxysms as well as in the intervals. Its over dose has become fashionable with some physicians in Brazil, as it has with others in the United States and in Europe. M. Sigaud thinks well of the union of calomel and quinine; and in some cases he practices bloodletting with benefit, in order to prevent a *raptus* in the brain, or pulmonary apoplexy, &c., rather than as preventive or preparatory. He lays great stress on emetics, and has repeatedly combated, with good effect, the prolonged fit in algid fevers by a large dose of ipecacuanha. In tertian or quartan agues, arsenic has been found to be quite successful.

Tubercular consumption is, we are assured by M. Sigaud, quite common in the cities of Brazil, constituting a fifth part of the mortality: it is alike inimical to blacks as to whites, but more destructive to women than to men. It runs its course more rapidly than in northern climates. Its contagious character in warm climates may be contested, but M. Sigaud thinks that there are some cases that render this belief probable.

Details, with illustrative cases of the different diseases heretofore mentioned, are given in successive chapters by M. Sigaud. Hematuria is quite a common affection in the southern tropic. It is not, the author thinks, due to a lesion of the kidneys or bladder, but to an alteration in hematosia. It consists of a discharge of blood mixed with whitish urine, both of which readily coagulate by rest.

The fourth section, on *Medical Sta-*

tistics, opens with a notice of the population of Brazil and the different races composing it, and is followed by a chapter on *longevity and mortality*. The author, as the result of his enquiries, believes that longevity is quite common in this country. Of the proportionate mortality in Brazil, we learn but little, if anything, from the work before us.

Interesting accounts follow of sanitary legislation and of scientific establishments, including more particularly the Faculties of Medicine, of which there are two. We notice fourteen chairs, filled by the same number of professors, in the Faculty of Medicine of Rio de Janeiro. A list of graduates and the subjects of their theses for several years follow, from which it appears that there were twenty-one who took their degree in 1842. The number of students in attendance on the lectures was 186. In 1840 it had been as high as 243. The school at Bahia had, at the last accounts, a hundred students. The graduates in 1842 were fifteen in number, the entire class having been sixty-eight.

The concluding chapters of M. Sigaud's instructive volume are on Milder waters, the *Materia Medica*, Surgical Statistics of Brazil, and finally a Biography of the Physicians, Surgeons, and Naturalists of that country.

Velpeau's Operative Surgery.*

Velpeau's celebrated work on Operative Surgery, translated and dressed up with numerous added American pieces and fashions, by Dr. Townsend, and introduced with all due courtliness

* *New Elements of Operative Surgery*. By Alf. A. L. M. Velpeau, Professor of Surgical Clinique of the Faculty of Medicine of Paris, &c., &c. Augmented with a Treatise on Minor Surgery. Illustrated by over 300 engravings, incorporated with the Text. Accompanied by an Atlas, a Quarto of Twenty-two Plates. Translated by P. S. Townsend, M.D., &c. Augmented by the addition of several hundred pages of entirely new matter. Under the supervision of, and with notes and observations by, Valentine Mott, M.D., Professor of the Operations of Surgery with Surgical and Pathological Anatomy in the University of New York, &c., &c. In three Volumes. Vol. I. pp. 851.

of manner and Sir Piercie Shafton enthusiasms by Dr. Mott, comes to us in a guise and of a bulk that must command attention and respect, dashed somewhat, it is true, with occasional misgivings at the entire success of the not very nicely adjusted machinery on which the distinguished Frenchman is brought before our medical public, as a teacher of surgery. In his other capacity, as a writer on obstetrics, he has been for many years known to the American reader, thanks to the labour of love of Dr. C. D. Meigs, whose translation has reached, and we may suppose now nearly passed, through a second edition.

In the admiring mood, we might call these "Elements," judging by the first volume now before us, an *Encyclopædia of Operative Surgery*; in the critical, we could wish that it had, like the latter, an alphabetical guide through its many divisions and turns. It exhibits French surgery and American surgery in abundant details, but it is deficient in method and can lay no claim to system. It is Mottish, but not even good mosaic. As it is important for the young surgeon to acquire a habit of calmness and to avoid all hasty movements, he will receive a good lesson, in this respect, by the many pauses that must intervene at the beginning of the present work, before he can reach M. Velpeau himself; and, even after this is accomplished, he must attend to sundry matters, if not premonitions, before he can get at the body of the work. He encounters first the "Translator's Preface," then "Dr. Mott's Preface," then, after "Muscles of the Human Body," and "Table of Contents," the "Preface to the First Edition," by the author himself, and next, "Preface to the Second Edition," and, inverting the common fashion, by putting the last foremost, comes "Appendix," after which the now drilled young surgeon, having received a long lesson of patience, reaches "New Elements of Operative Surgery." Even here the author does not go directly to his sub-

ject, but masks his approach with definition and division and classification, and a pedantical disquisition of an entire page on the meaning to be attached to *methods*, *processes*, and *modes*, ending with a remark that might have saved the necessity of its precursors, viz.: "It is permitted to every one in such a discussion to adhere to such usages if he pleases, or to reject them and place no value upon them."

Dr. Mott's age and position authorize, we must suppose, a style of address to the author and of patronage of the translator, which in a younger and less noted person would, we are afraid, provoke ridicule if not cauterization. His letter to M. Velpeau, with which he begins his Preface, is an amusing mélange of flattery of his correspondent and still more of himself. He books himself as "a *compagnon de voyage*" with M. Velpeau "upon the highway of the science, where it has been so long our pride, fortune, and pleasure to travel." He had, just before, promised to present a more minute and authentic detail than has ever yet been anywhere published of all that relates to what he may be justly and conscientiously entitled to claim as his own property. This language might imply suspicion of the probity of his future fellow traveller, did not Dr. Mott afterwards assign the reason for his wish to bear company; that by this means, as he says, "I might find an appropriate place and guaranty for indulging the ambition that I, like others, must naturally have of seeing legitimately transferred through an orthodox and approved organ, for the judgment of an impartial posterity, an authentic account at least (if only at best but an *abregé* one) of my *stewardship* also in the great field of science." Why so difficult to find a good expressive English word to represent *abregé*? Why should the transmuting process stop at this word?

The ability of Dr. Townsend to be the linguist in this voyage is duly avouched, even to iteration, by his friend, Dr. Mott, who assures us that

he "may safely stand as his sponsor." In our simplicity, participated in, we believe, by a goodly number of our medical brethren, we would be quite content with Dr. Townsend's own announcement that he had performed the task, for which, without derogating from Dr. Mott's accomplishments, we are inclined to believe him better prepared by scholastic training and habits than his surgical sponsor, even although the latter, if we remember right, sacrificed [deseccated?] at Epidaurus, by taking up the arteria innominata of a cock—a bird erst sacred to Æsculapius.

In the midst of abundant friendly professions, and *politesse de la vieille cour*, a little of the Yankee peeps out in the following sentence: "I write you thus opportunely upon the subject, with the hope that it may be agreeable to you to signify your commendation to this proposed undertaking, and under the possible contingency that it might be your wish to suggest some alterations or additions to this *American edition* of your work." To this the Parisian professor replies, in a strain attuned on the cords strung by Dr. Mott, and pays him back with *les plus jolies compliments possibles*. One is reminded, in reading these letters, of Moliere's *Femmes Savantes*.

Putting aside for the present all questions of taste as to the manner in which this work by M. Velpeau is introduced to the American public, let us look at its inherent merits, and see whether these are sufficient to recommend it to general attention and perusal. As a great repertory of the most approved fashions of operating and of details of minor surgery, the "Elements" deserve, and will, we hope, obtain, a place in the library of young surgeons and physicians who may be required, on occasions, to use the knife or apply bandages and splints. Although on separate parts of surgery we have more available guides, it is not in our power to procure elsewhere so full and comprehensive a treatise on all the points coming within the domain

operative surgery. The objection that may be made to the work, of its being unlike, in arrangement and manner of treating the subject, any preceding one, does not strike us with any force. This feature is rather a recommendation, since it draws the student out of mere routine, and requires him to observe under new lights and relative bearings.

We do not pretend to give a critical analysis of the first volume, the only one as yet published. It would be necessary, for the purpose of a comprehensive review, that the entire work should be placed before the critic. In looking over the contents of the present volume, the eye sometimes lights on omissions in the midst of apparently the very extreme of detail,—as, for example, in the chapter on “Bleeding,” in which so full a description of the varieties of phlebotomy is given, and minute directions laid down for the use of the thumb or spear-shaped lancet, no mention whatever is made of the fleam or spring lancet, that in use by the great majority of surgeons, physicians, and professional bleeders in the United States.

The translator and his friend, Dr. Mott, the supervisor, are sometimes at fault in the treatment, as in the instance of erysipelas. Mr. Fergusson (*Practical Surgery*, 1842) is referred to as adopting a new practice in this disease, viz., of applying leeches on parts affected with erysipelas. The remedy used in this way is by no means a new one. Of our own personal knowledge we can speak of it as applied twenty years ago. Even if the American editors had overlooked English practitioners on this point, their familiarity with French surgical literature should have made them aware that Dupuytren used in past years occasionally to apply, and M. Blandin, at the present time, is in the constant habit of applying leeches in great numbers to an erysipelatous part. Silence is preserved by Dr. Townsend on punctures as a preferable remedy to even incisions, in the treatment of erysipelas. The serious defect in M. Velpau restricting himself to a notice of the external remedies only, in this

disease, has not been made up by his American volunteer *agregés*. It were better, in a work of this nature, not to touch at all on constitutional treatment, than to give such imperfect notices as must, we should fear, mislead the inexperienced practitioner, who might, peradventure, occupy himself in imitating M. Velpau by trusting to external treatment alone in erysipelas, and in so doing allow his patient to die.

But we resume the more pleasing office of recurring to the good features of these elements with the large and numerous additions that they have received from the hands of Dr. Townsend. The illustrations by woodcuts of all the operations, and sometimes of the different steps of an operation, aid greatly in conveying to the mind of the student and junior practitioner a clear idea of the literary description. On the subject of *Anaplasty*, or *Autoplasty*, by which modern surgery, while renouncing after the fashion of the German students at their universities, has really set forth valid claims to our gratitude, the details are ample and diversified. When speaking of that division of Anaplasty termed Rhinoplasty, Dr. Townsend mentions Dr. J. M. Warren, of Boston, Drs. G. McClellan, Mütter, and Pancoast, of Philadelphia, Dr. Muzzy, of Cincinnati, and Dr. Marsh, of Albany, surgeons who have, with more or less frequency, performed this operation in the United States. Praise is awarded to Dr. Mütter, as one who may lay claim to having carried the art of anaplasty, applied to removing cicatrices from burns, to a higher perfection than elsewhere known. Numerous as are the additions to the text of M. Velpau in the body of the volume, they are nothing when compared with the “Concluding American Appendix” of upwards of a hundred and seventy pages, in which the subjects of *anaplasty* and *tenotomy* would seem to be exhausted. The *Atlas*, in quarto, announced in the title page, will be issued, we suppose, hereafter; probably in company with one of the two volumes yet remaining to complete the work.

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The difficulty of obtaining the Blue Mercurial Mass of good quality, has induced physicians in England to prescribe that which is prepared at the Apothecaries' Hall, London, where it is manufactured by a machine consisting of an iron mortar and four wooden pestles, driven by a steam engine. This both triturates and rolls the mass, and is described by Rennie in his valuable supplement to the Pharmacopœia as stronger than that made by hand. The physicians of this country have had much more cause of complaint. That which has hitherto been made here is of the most inferior quality; sometimes not containing more than one part of mercury in four of the mass (and that most imperfectly extinguished), some of it being made from the oxide instead of the minute division of the mercury, some made from a combination of gum and other substances, rendering it in a short time hard, dry and mouldy; at other times having more the appearance of some narcotic extract than that of Blue Mass. — These causes have combined to induce physicians to order and prescribe that made in London.

Inferior qualities have also been imported to realize a larger profit, and at other times English labels have been put on a very inferior American article. Geo. W. Carpenter & Co., to guard against these abuses, and being greatly desirous of furnishing an article fully equal to that of Apothecaries' Hall, London, or any which has been imported, have instituted a number of experiments, devised various plans, and tried different kinds of machinery with the view of discovering the best and most effectual mode of extinguishing the mercury, and they are highly gratified in being able to inform the Faculty and Druggists of the United States, that by the aid of a steam engine, and an apparatus of their own invention, they can reduce the mercury in much less time and much more effectually than it can be done by the ordinary process of hand power. The mercury exists in Blue Mass, in a state of minute division, and not in that of an oxide, as is supposed by some writers. If it were an oxide, it could be made at much less expense than by the tedious mode of trituration. M. Roux (Pharmacien à Nîmes), in the *Journal de Pharmacie*, 11 vol., page 215, has made some ingenious experiments on the division of mercury in vacuo, by means of a substance containing no oxygen, and by which it has been effectually proven that the mercury in the ointment, and in the blue mass exists in the state of minute division. To reduce the mercury properly, it is necessary to use substances of much less viscosity, and of a consistence which is difficult to amalgamate, as it requires very cor-

incorporated with every part of the viscid mass, which would take great physical strength, and cannot be done by hand power. Hence a larger part of the Blue Mass and Blue Ointment which is for sale in the shops, is improperly made, and is entirely ineffectual as a medicine, differing essentially in the properties which Blue Mass possesses when made by machinery. The Blue Pill is the mildest preparation of mercury we possess, and in certain diseases or states of the system, is preferable to any of the other mercurial remedies. In general, where it is desirable to produce a gradual and gentle mercurial impression, and where the bowels are easily excited into action, the Blue Pill is the best form of employing mercury. It therefore should be pure and free from all adulterations, and from any foreign substance which could in any degree alter its chemical character. Much of the quicksilver of commerce has more or less adulteration of lead, tin, and other metals; it therefore should be distilled before it is employed for Blue Mass, or otherwise ascertained to be pure.

Mr. Abernethy has also attributed deleterious properties sometimes existing in the Blue Pill, to sulphuric acid, which is not unfrequently found to exist in the conserve of roses; Dr. Paris also observes, that in making conserve of roses in England, some of this acid has been added to brighten the colour; if so, the mercurial pill which is made from it, may contain in varying proportions, some of that highly deleterious compound, the sub-sulphate of mercury. To guard against all these difficulties, G. W. Carpenter & Co. will attend particularly to the purity of the quicksilver, and will have the conserve of roses manufactured under their supervision, and by the aid of their machinery with steam power, will prepare an article which physicians can rely upon. They purpose going largely into the manufacture of it, as well as the manufacture of the Blue or Mercurial Ointment by the same process. They will be prepared to supply the Druggists and Apothecaries of the United States with an article fully equal to any of the imported, and at as low a price, and for the accommodation of those who purchase in the New York and New Orleans markets, will have agencies for the sale of it in each of these places. They will put it up in pound and half pound jars, and have their name and the signature of Geo. W. Carpenter, on each jar, so that it may by this means be known as their manufacture.

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THE
BULLETIN OF MEDICAL SCIENCE.

VOL. III.]

Philadelphia, April, 1845.

[No. 4.]

CAUSES OF DISCHARGE OF OVA.*

THE remainder of the work is occupied with the exposition of the author's opinions and the details of his observations with reference to the periodical discharge of ova in the unimpregnated state, by the female of mammiferous animals. And here we come upon ground where M. Raciborski's honours are contested by another observer: by one of unquestionably higher scientific repute, and whose minutely-recorded observations, setting forth the steps by which he was led to the important discovery that he claims as entirely his own, certainly create a strong prejudice in his favour. M. Bischoff is unwilling to allow to M. Raciborski any higher merit than that which he shares in common with Dr. R. Lee, Mr. William Jones, Dr. Paterson, and MM. Négrier and Gendrin, of having proved the progressive development and final rupture of a Graafian vesicle at the time of menstruation and rut, and the subsequent formation of a *corpus luteum*, independent of impregnation. "The problem to be worked," as M. Bischoff remarks in his letter in the *Gazette Médicale* of Sept. 25, 1843, "was this: to prove that the escape of ova from the ovaries of mammifera and of the human female, does not depend on sexual intercourse, and on the influence of the semen, but on their own independent and periodical development. To prove this truth, it was necessary to follow the ova in different phases of develop-

ment, to observe the rupture of the follicles of De Graaf, and to detect the ova in the tubes and oviducts in cases where sexual intercourse had not previously taken place. Now these direct proofs have been furnished by no one except myself. Neither M. Duverney, nor M. Pouchet, nor M. Raciborski, has traced the ova in the ovary and the oviduct." It is indeed unquestionable to M. Bischoff that the honour belongs, of having been the first to furnish that most satisfactory of all proofs, which is supplied by the discovery of the ovum during its transit through the Fallopian tube in an unimpregnated animal; though we cannot think him warranted in his assertion, that M. Raciborski had no notion of the whole truth when he published his first observations. The truth we believe to be, as is so often the case, between the two, for we by no means coincide with M. Raciborski in thinking that the changes which may be observed in the Graafian vesicles prove quite as much as can be gathered from discovering the ova external to the ovary. These changes may, indeed, render extremely probable, but they cannot be regarded as proving that conception is merely the result of the accidental meeting of the semen with ova thus periodically discharged. That most important fact — the grand fact, indeed, to which the others are all subsidiary — could not be considered as actually demonstrated until observations had been made, such as those of Prof. Bischoff. Now previous to the publication of M. Bischoff's researches, it does not appear that M. Raciborski had ever detected ova ex-

* From British and Foreign Medical Review, Jan. 1845, Art., A Review of Raciborski and Bischoff on Puberty, &c.

ternal to the ovary; and we think, therefore, that the credit of having rendered certain a fact which previously was only in the highest degree probable, belongs to Professor Bischoff.

But to return to the observations of M. Raciborski. It was in the sow that he first watched satisfactorily the progressive maturation and final rupture of the Graafian follicles. The peculiar structure of the ovary in that animal renders the alterations that the Graafian vesicles undergo remarkably evident. The first change seen to take place in them is the very considerable increase of those which lie nearest the surface of the ovary, when the animal is approaching that age at which she becomes capable of propagating. At the same time, the thickening of the investing membrane of the vesicles obscures their transparency, and their contents become more viscous and more abounding in granules. At the period of rut, the neighbourhood of some of these vesicles grows much congested, and the slight hemorrhage which often takes place into their cavity gives a bloody tinge to their contents. After continuing thus turgid for some days, the vesicles burst, the ovum escapes, they contract in size, and are found to contain only a little uncoagulated blood. The external tunic now contracts upon the empty cavity, and falling into folds, occasions the stellated appearance presented on making a section of a *corpus luteum*. Time greatly modifies the appearance of these bodies, and eventually they disappear; but during the whole period that the generative power continues, the ovaries will be found to contain Graafian follicles in different degrees of development: some which have long since been ruptured, and of which a single yellow tubercle is the only trace; others which, having burst more recently, present the radiated appearance with great distinctness; while others, nearer the surface, are growing turgid, and preparing for the discharge of their ova, when next the rutting season takes place; and some, still small and undeveloped, are imbedded in the interior of the ovary. Similar changes, though not quite so clearly marked, occur in the ovaries of other mammifera. In the case of a bitch, indeed, that had been shut up by herself, on manifesting the first symptoms of rut, and had been kept secluded from other dogs for a week before being killed, M. Raciborski not only found some follicles quite turgid, and one already ruptured, but likewise detected an ovum in each cornu of the uterus. The detail of this

observation leads M. Raciborski into a lengthened exposition of his claims to the priority in this discovery, as opposed to those of M. Bischoff, on the merits of which we have already expressed our opinion. He next gives some interesting notices of analogous facts observed by other physiologists, but from which they had failed to draw all the inferences of which they would have admitted; and then quotes the ingenious and conclusive train of reasoning by which, though unsupported by direct experiment, M. Pouchet of Rouen, as early as 1835, had arrived at the conclusion, "that, beyond a doubt, the ovary, through the whole animal kingdom, discharges the ova independently of impregnation."

From the examination of the changes in the ovary of animals, M. Raciborski proceeds to investigate their alterations in the human female. In doing this he notices incidental observations by various writers, which, though not thoroughly understood by the persons who recorded them, may yet be appealed to at the present day as evidence in favour of the spontaneous rupture of the Graafian follicles. He next criticises the facts adduced by M. Gendrin, and also those by M. Négrier, as instances of the occurrence in the human subject, and shows the utterly inconclusive nature of the observations of the former writer. Even the far more correct account furnished by M. Négrier has the great defect that the subject of his observations were not virgins; and consequently that the appearances he describes may have been the result of impregnation, and therefore cannot be regarded as establishing conclusively the fact of the spontaneous rupture of the Graafian follicle. In two instances M. Raciborski examined the ovaries of females in whom the hymen was perfectly intact, and who died just a month after they last menstruated. In each case one ovary was much larger than the other, and presented a Graafian follicle so turgid, and surrounded by so much congestion, as evidently to show that it would have speedily burst and given exit to the ovum. In no instance has M. Raciborski had the opportunity of examining the ovaries of any person who died while menstruating. M. Négrier, however, examined the ovaries of a young woman who died of violent scarlatina on the second day of the flow of her menses. No rupture of any Graafian follicle had yet taken place, though the coats of one that was very turgid were extremely attenuated. From this fact, as well as from the analogy afforded by animals in whom the rupture of the vesicles does not occur till after the state of heat has continued for some days, M. Raciborski concludes, with great probability, that the escape of the ovum in the human female does not take place till towards the end of the menstrual period. He further supports this opinion by reasons deduced from the appearance of the

ovaries in women who have died a few days after menstruation. When we find him, however, asserting "that none but extremely slight traces of a corpus luteum are ever met with in women who have died in childbed," we cannot avoid concluding that his opportunities of examining the human ovary must have been but scanty; and we feel disposed to look with suspicion on arguments founded on such questionable data. M. Raciborski has collected evidence of another kind, however, in proof of the fact that the escape of the ova takes place towards the end of each menstrual period. Out of a large number of patients in the *Clinique d'Accouchemens* at Paris, whom he questioned as to the date of their last menstruation, and also of their having had sexual congress, fifteen only were able to furnish clear replies to both inquiries, but the answers of these fifteen all tend to substantiate M. Raciborski's opinion.

Such is an outline of Raciborski's observations; we will now turn to the carefully conducted investigations of Professor Bischoff. The various phenomena of generation had for years formed his especial study; but he long acceded undoubtedly to the old theory "which regards the escape of the ovum from the ovary, or the first condition essential to its development, as in some way or other necessarily connected with sexual congress." A repetition of the experiments of Nuck, Cruikshank, Haighton, Grassmeyer, Blundell, and Hausmann, first satisfied him that the escape of mature ova from the ovary was not determined by any action of the male semen. These experiments, of which he gave a minute detail, consisted in interrupting the communication between the vagina and ovaries by excision of part or the whole of the uterus, and then examining the bodies of the animals more or less speedily after they had had intercourse with the male. The first step of his investigation led him to the conclusion,

"That these experiments of my predecessors and myself prove most positively that, although the entrance of the male semen into the fallopian tube, and its access to the ovaries, and its consequent action be prevented, yet, on the occurrence of heat (and in the above-mentioned cases after copulation), exactly the same changes occur in the ova and ovaries as in the normal condition. The ova mature, the Graafian vesicles become turgid and burst, and corpora lutea form, the ova escape and enter the oviduct, and some even of the phenomena of their development begin to take place. As the action, however, of the male semen on the ova is prevented, their development does not continue, but retrogrades, and the ova become dissolved and abortive. This last circumstance proves that the entire series of the phenomena is in-

dependent of impregnation, and has its origin in the natural course of development of the ova themselves. The influence of the aura seminalis, or the occurrence of resorption of the semen, or the existence of some more mystic agency in sexual congress, which some earlier observers have supposed to be proved by these experiments, would each be grounded on a supposition that I have shown to be untenable, from the fact of the semen coming into actual contact with the ova; and in these cases, too, is especially disproved by the circumstance that these ova, with which such actual contact of the semen was prevented, were insusceptible of development, and perished. Had the influence of the semen and sexual intercourse been the cause of the escape of the ova, and of the development of the corpora lutea in these cases, the ova, also, must have been impregnated, and their development must have gone on further. I think, therefore, that notwithstanding the occurrence of sexual intercourse, the independent development of the ova is proved by these experiments." (pp. 17-18.)

It may be doubted whether Professor Bischoff has not drawn a wider inference from these experiments than they quite warrant; since it is perfectly conceivable that the venereal orgasm might exert such an action on the whole system as to occasion the detachment of an ovum, though from the obliteration of the fallopian tube, the access of the male semen, and its consequent impregnation be impossible. The following experiment, however, satisfactorily proves the correctness of this opinion. A young and healthy bitch that had never pupped, was watched for several days after coming into heat, and then was lined. Immediately after coitus, Professor Bischoff extirpated the left cornu of the uterus, together with the ovary and Fallopian tube of the same side. He now made a careful microscopic examination of the parts he had removed, and found that semen had reached as far as the upper angle of the cornu of the uterus, and that the spermatozoa were moving. There was no trace of semen in the tube, but the ovary already presented burst Graafian follicles and distinct corpora lutea. Five ova were discovered in the Fallopian tube, along which they had advanced about two inches.

After the lapse of twenty hours the bitch was killed, Professor Bischoff having calculated that time had then passed sufficient for the semen to reach the remaining ovary, when five small openings were observed in the right ovary, and five corpora lutea were contained within it; five ova too were contained in the Fallopian tube, and had reached the middle of its canal. Spermatozoa,

still in a state of activity, were found to have penetrated about three lines beyond the uterine orifice of the tube, but none were found in the rest of the tube, nor were there any about the ova, which therefore, without doubt, were not yet impregnated.

It would seem, from this observation, that the lapse of time between the escape of the ova and their fructification varies: since, in other instances, six, eighteen, or twenty hours after coition, the Graafian vesicles were found still closed, and the semen was discovered to have traversed the whole length of the Fallopian tube, and to have reached the ovary. For this difference there would seem to be no other assignable cause, than the individual peculiarities of different animals, some of which admit the approaches of the male at an earlier period of rut than others: some while the ova are still contained in the ovary, others not until they have already entered the Fallopian tube. It is not possible to fix definitely the period during which the impregnation of the ova is possible. "But since bitches generally admit the approaches of the male during eight days, and since the first distinct indication of the development of the ova, namely, the cleavage of the yolk, begins in the lowest part of the Fallopian tube, at which they arrive about the seventh or eighth day, this would seem to fix the limits during which impregnation is possible in the dog." (p. 22.) From this too it is evident, how thoroughly uncertain a mode of calculating the date of the escape of ova from the ovary, is the hitherto customary one of reckoning from the first sexual congress, and that it can at the most present only an approximation to the real results.

Still more conclusive, however, are those experiments in which animals were killed during the state of heat, but without having been allowed access to the male, and in which nevertheless Graafian vesicles were found ruptured, and corpora lutea developed; and the ova themselves were detected at some point or other in the Fallopian tubes. Some observations of Hausmann indicate this result, but the strange prejudice that led him to deny the existence of the ovarian ovum of course diminishes their value, and confines the evidence afforded by them to the two former points,—the rupture of Graafian vesicles, and the development of corpora lutea. Professor Bischoff relates the particulars of the observations which he made with the view of ascertaining this

The first was made on a lamb

which had never before been in rut, and which was killed some hours after it entered into that state. A Graafian vesicle was found ruptured in the right ovary, and the ovum was detected in the corresponding Fallopian tube. The second experiment was made on a bitch which was watched while in heat, until she appeared willing to admit the male, but was then prevented from so doing. Two days afterwards Professor Bischoff extirpated the left ovary and Fallopian tube, and closed the wound by suture. No Graafian vesicle had burst, but four were extremely turgid, and from 2 to 2½ Paris lines in diameter.

"I dissected them carefully," says the author, "from the stroma of the ovary, and then laid them upon a plate of glass. As I opened the first, an ovulum, still surrounded by its disc, and 0.0078 of a Paris inch, or 11-50th of a millimeter, in diameter escaped with the fluid. To my surprise, however, this Graafian vesicle contained a second ovulum with its disc, measuring 0.0081 of a Paris inch, or 1-4th of a millimetre, in diameter. The three other follicles each contained an ovum of about the same size. The inner surface of the Graafian follicle was already beset with delicate granulations, the first traces of the mass that forms the corpus luteum, which, as it seems to me, develops itself from the cells of the membrana granulosa. I observed here, very distinctly, in several Graafian vesicles, the manner in which the ova are contained within them. The cells of the disc form a small cone, whose rounded apex receives the ovulum with which it projects free into the fluid, filling the cavity of the Graafian follicle: while it is attached by its base to the wall of the follicle, probably just in that situation where its rupture subsequently takes place.

"These ova, however, did not appear to be perfectly mature and ready to escape. For not only were the walls of the Graafian vesicles not very much attenuated, but the cells of the disc were not yet elongated into those fibrils, the existence of which betokens the full maturity of the ovum. The ova, when entirely detached by means of the needle from the zona, measured 0.0060, or 0.00665 of a Paris inch, or from 8-50th to 1-6th of a millimetre, in diameter. In all of these the yolk completely filled the interior of the zona, except at one place, where, for a very small extent, the yolk-granules had retreated, as though that were the situation of the germinal vesicle. I was nevertheless unable to distinguish it, either while the ova were still closed, or when I had opened them under the compressorium. I feel therefore quite certain that had the bitch been lined at this time, the spermatozoa would have had time to reach as far as the ovaries before the Graafian vesicles would have ruptured." (pp. 29-30.)

Five days afterwards the bitch was kill-

ed. Four large corpora lutea were found in the ovary, and on careful examination the four ova were discovered in the Fallopian tube, and already three inches distant from its abdominal orifice. The ova still presented the disc surrounding the zona, but its cells no longer retained their natural appearance, and their solution had evidently commenced.

"The ova had somewhat increased in size, being 0.0090 to 0.0097 of a Paris inch in diameter; but the yolk appeared somewhat shrunken, and no longer filled up the zona. It retained moreover its usual form, and not a trace of cleavage was evident in it. In one ovum (that which was nearest to the commencement of the Fallopian tube), there was evident in the interspace between the yolk and the zona, that large vesicle or granule measuring 1.140th of a Paris line, or 1.62d of a millimetre, which I have already pointed out as being the nucleus of the germinal vesicle. In the three other ova, nothing of the kind was observable. I saw no trace of the germinal vesicle in any of the ova." (p. 31.)

We certainly agree with Professor Bischoff in the opinion that it can hardly be possible to display more clearly than has been done by this twofold observation made on the same animal the whole process of the maturation and escape of ova during rut, and its independence of coition. Still further proof, however, is afforded by the examination of the genitals of the sow, of which three instances are recorded by Professor Bischoff. The existence of the same law through the whole class of mammifera is further illustrated by an observation on the rat, detailed, as all his other observations are, with a minuteness and precision wholly unlike the general terms in which M. Raciborski's observations are couched, and which leave the reader at a loss as to the number and nature of the facts on which his assertions are grounded.

"From all that has been said, it is quite certain that during rut, even when coition does not take place, the ova of mammifera become detached from the ovary, and enter the Fallopian tube where they perish; but corpora lutea form exactly as when sexual intercourse and impregnation have occurred." (p. 38.)

To the latter clause of this sentence indeed, we still cannot avoid withholding our assent; the identity of the corpora lutea formed independently of impregnation with those which succeed to fruitful intercourse between the sexes, appears to us, to say the least, not yet proven. The recent observations of Dr. Ritchie indeed seem to indicate that the whole subject of the struc-

ture and varieties of the corpus luteum requires a new and most careful investigation.

We have now noticed the whole of the evidence in support of this new theory of generation afforded by the investigations of Professor Bischoff. The remainder of his tract is occupied with pointing out the probability that the same phenomena which have been proved to take place in animals, do likewise occur in the human subject, and that menstruation in the human female is but a slightly modified expression of the same occurrences as take place in animals during the state of rut. We cannot, however, enter now upon the detail of these arguments, for the mere relation of Professor Bischoff's observations has already led us further than we intended.

For the present, then, we take leave of the subject, though soon to return to it; since almost every day some new light is shed on its mysteries; or at least inquiries which seem to produce no other fruit, show how much of what has appeared to be most plausible, or most clearly proved, rests either on groundless assumption, or on investigations vitiated by some preconceived theory, or leading to results capable of various explanation.

ON

INFLAMMATION

AS A PROCESS OF

ABNORMAL NUTRITION.

BY

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(Continued from page 88.)

3. THE TERMINATION OF INFLAMMATION IN RESOLUTION.

By resolution has always been understood the disappearance of the inflammation without causing any external lesion. It is best seen in the case of a phlegmonous abscess or bubo, which, being more or less advanced, presenting even a feeling of fluctuation, gr

ally becomes harder and harder, smaller and smaller, and at length disappears without breaking. In this case the abscess is resolved, — in point of fact, the exudation has been absorbed.

Resolution or absorption of the exudation may occur in various ways, and follow any of the transformations of the exudation except the one which converts it into permanent tissue. The early phenomena first disappear; the capillaries recover their contractility; the attraction between the blood and parenchyma ceases; and the blood within the vessels begins to oscillate, and at length flows in a continuous stream. *Secondly*, the essential phenomenon disappears, no further exudation takes place, and that already poured out is absorbed.

It occasionally, though rarely happens, that the exudation does not coagulate for some time after it is exuded. Under these circumstances, when the early phenomena terminate, it re-enters the vessels by endosmosis, unchanged. In the majority of cases, however, it coagulates, and once rendered solid, it could never be absorbed, without the occurrence of changes in it, by which it is again rendered fluid. This is effected by the formation, ripening, and disintegration or decay (moulting process, Schulz) of nucleated cells, whereby the coagulated exudation is broken up, made soft, pulsatious, and diffuent, and at length absorbed. It is by this process that exudation poured out into the lung or brain gradually disappears, by the production of inflammatory softening, such as we have previously described it. On the serous surfaces, the fluid and broken down corpuscles are absorbed; but that portion which passes into permanent organization is transformed into fibrous tissue, becomes covered with a smooth membrane, so that the functions of the organ are not to be disturbed. Abscesses when resolved undergo a similar process.* The pus cells, instead

of being evacuated, are brought closer together, from the absorption of the more fluid portion (*liquor puris*). These are gradually broken down, the cell walls are dissolved, and the whole is reduced to a molecular matter, which re-enters the vessels, and thus complete resolution is produced.

The disintegration of pus corpuscles previous to absorption is evidently favoured by the pressure which the abscess receives from the contraction of the filamentous and elastic tissues that form its walls. This is shown by the increased hardness which always accompanies the disappearance of suppuration by resolution, and the good effects which result from direct pressure employed by the surgeon to discuss these swellings. In Berlin, the most successful treatment for bubo consists in simply placing a stone of one or two pounds weight over the tumour in the groin, as the individual is laying on the back. It is probable, also, by increasing the contraction of the integuments, as well as by removing fluid from the neighbourhood of the part, that irritants, blisters, and cauteries are so beneficial in the resolution of abscesses.

It is suggested by Zimmerman that the formation of an acid, as the lactic, in abscesses when fully formed, favours their disintegration. We have seen that acetic acid dissolves the cell wall, and causes the nucleus to appear in the form of granules. If lactic acid be produced it would probably have the same effect. Alkaline solutions also, it is well known, dissolve pus corpuscles, — a circumstance that may explain the discutient effects of alkaline lotions and washes, and their beneficial operation in removing the incrustations from eruptive pustular diseases.

The next point to determine is, what becomes of the molecular fibrin, which thus re-enters the circulation? On this subject the observations of several German physicians, more especially Schonlein and Zimmerman, have thrown much light. They have observed with great care the changes which the urine undergoes in acute inflammatory diseases, and determined that these changes bear a relation to the absorption of exuded

* I have seen cases in which pints of matter have been taken up in psoas abscess, and the parietes

remain without breach." — *Travers on Inflammation*, p. 186.

blood plasma in internal organs. Thus in a case of pneumonia, which I watched in La Charité Hospital, Berlin, under Schonlein in 1841, he pointed out that the disappearance of dulness was accompanied by a turbid state of the urine, which contained a large amount of molecular fibrin, and was also highly coagulable by heat. Similar results have been frequently observed in the clinical wards of Schonlein during the resolution of pleuritis, erysipelas, small-pox, abscesses, and other diseases. M. Martin-Solon, in his work *de l'Albuminurie*, 1838, observes, that in a great number of instances of acute febrile and inflammatory diseases, such as ague, typhus, measles, small-pox, febrile urticaria, pneumonia, gout, rheumatism, and inflammation of serous membranes, he has remarked that the urine for some days about the period of crisis yields a more or less abundant precipitate, which is owing to a superabundance of lithate of ammonia.* Zimmerman more especially has recorded instances where the turbidity and coagulability of the urine bore a marked relation to the diminution of suppurative swellings. In some cases where purulent matter was apparently absorbed, he had observed that the urine was coagulable from the presence of fibrin dissolved in it.† In a case of pleuritis, and another of pneumonia, where this change in the urine was observed, the blood also was found to contain an excess of fibrin.

These observations have led to the conclusion, that the molecules of the broken up exudation, after circulating in the blood, are frequently eliminated by the kidneys, and make their exit from the system by the urine, sometimes entire, at others in a state of solution. This conclusion is confirmed by a number of pathological and chemical facts, and may be considered established. Occasionally the excess of fibrin may be eliminated by the skin, lungs, and bowels. In all cases it constitutes an important symptom of the crisis.

The morbid deposition in urine is not always the same. It is very probable that the fibrin, whilst circulating in the blood, undergoes certain changes of a chemical nature. According to Liebig, the oxygen of the blood converts the fibrin into urate of ammonia, choleic acid, sulphur, phosphorus, and phosphate of lime. Each of these undergo further changes. The urate of

ammonia, by the farther action of oxygen, is converted into urea and carbonic acid; the choleic acid into carbonic acid and carbonate of ammonia; the sulphur and phosphorus into sulphuric and phosphoric acids, which, combining with an alkali or earth, form sulphates and phosphates. If it should happen that the quantity of oxygen taken in is not sufficient completely to accomplish this cycle of changes, then instead of urea, either urate of ammonia appears in the urine, or, if the ammonia have entered into any other combinations, pure crystals of uric acid or fibrin.* In this manner we can comprehend how, after the resolution of acute inflammatory diseases, different sediments appear in the urine from the conversion of the excess of fibrin contained in the blood.

Mulder has lately shown, that the buffy coat in inflammatory blood is an oxide of fibrin. Now, it may be asked, does this excess of oxygen attach itself to the fibrin already in the blood and precede inflammation?—or does it combine with the fibrin reabsorbed after exudation has taken place? I am inclined to suppose the latter, for it is difficult to explain how the blood should receive a relative increase of fibrin before inflammation, or, as we have endeavoured to express it, its essential phenomenon, exudation, has taken place. When, however, we know that the fibrin which has been coagulated in the parenchyma of the lung in pneumonia is, after a time, reabsorbed, the presence of an increased amount of that principle in the blood is easily accounted for. We are far from wishing to attribute the whole of the increased fibrin to this source. A similar change has been observed in the mass of the blood under circumstances where the local symptoms were comparatively trifling, and where the lesion was incapable of furnishing the amount of fibrin formed, as in amygdalitis, for instance. In such cases, however, according to Andral and Gavarret, the increased quantity of fibrin was small. At all events, it appears by no means improbable that the amount of fibrin thus absorbed, added to the amount previously existing, may so surcharge the vital fluid that its excretion by the emunctories becomes visible.

Of secondary purulent formations.—In a former part of this essay, we stated that no one who had examined the blood corpuscles on the one hand, and the capillaries on

* See Christison "On the Granular Degeneration of the Kidneys," p. 42.

† Casper's *Wochenschrift*, 1843

* Simon's *Beitrage*, p. 536.

the other, could conceive the possibility of the former passing through the latter if both structures were in a state of integrity, and that all observation was opposed to such a supposition. In like manner it is impossible that blood or pus corpuscles could pass backwards into the vessels. How, then, it may be asked, do the metastatic abscesses, or secondary depositions of pus, as they are frequently termed, which follow severe wounds and injuries, take place? Similar observations to those we have just alluded to, indicate two modes in which this occurs. Either the broken down pus corpuscles when absorbed are again deposited in organs, and, conjoined with fresh exudation, constitute the blastema for a new formation of pus, or they pass unchanged through lacerations in vessels large enough to receive them, become obstructed in the minute capillaries, and then produce inflammation and suppuration.

The same observations to which we have previously alluded, respecting the absorption of the exudation in a molecular form in pneumonia, pleuritis, abscesses, &c., also indicate the possibility of the molecules being occasionally deposited in other organs when anything occurs which obstructs their excretion through the kidneys. It is certainly difficult to prevent hypothesis from entering into our consideration of this subject, because, hitherto, observations of the state of the blood and of the urine have been very few in such cases. We may readily understand, however, that if the excess of fibrin does not pass off in the urine or some other discharge, it may be deposited in a molecular form in other tissues, and there constitute a blastema, in which (perhaps conjoined with fresh exudation) collections of pus corpuscles arise. In this manner a secondary inflammation followed by supuration may be occasioned.

Gruby states that the corpuscles found in a metastatic abscess are destitute of cell walls. Afterwards, according to him, an inflammation arises around the metastatic infiltration; new globules of pus with an envelope, molecules, and a central vesicle, shortly arise; so that even here and there, in a metastatic abscess, globules of pus with an envelope are to be detected. This, in our opinion, is tantamount to saying, that pus corpuscles are formed in the granules of the exudation deposited.

Secondary purulent formations, however, are most common results of severe injuries, such as compound fracture or laceration of

parts. In such cases a large number of vessels are torn across, and we can readily understand, that if the exudation or lymph which ought to obstruct these vessels, instead of passing into permanent tissue, become transformed into pus, that the corpuscles will have a direct and ready entrance into the circulation. We shall afterwards see that a rapid and large amount of exudation, as occurs in such cases, favours this result. Zimmerman supposes that the pus already formed dissolves the coagula, which obstruct the vessels. Perhaps it would be more correct to say, that, instead of passing into tissues, the coagulated blood plasma forms a blastema for the formation of numerous corpuscles. That, under certain circumstances, this occurs even within the vessels, has been shown by Gulliver,* and I have satisfied myself of the correctness of his statements by direct observation.

In a man who died after amputation of the thigh, under Mr. Syme in the Royal Infirmary, I carefully dissected out the femoral vein and its principal branches leading from the stump. In slitting up the main trunk, I found it entirely filled with a coagulum, which, in the portion of the vessel passing under Poupart's ligament, was very firm; but, on tracing it downwards, its consistence was found to diminish. About the middle of the thigh it was broken down and soft, and, towards its termination, became diffuent. That this was not a mechanical softening was proved by a careful microscopic examination. Superiorly the clot only contained the minute primitive filaments found in colourless coagula. Further down these became mixed with plastic and exudation corpuscles. The latter were very numerous at a portion of the vessel which was somewhat constricted. As the examination proceeded lower, the corpuscles became more numerous, and the filaments disappeared, until at length nothing but corpuscles, innumerable filaments, and the fluid in which they swam, were present. In another case, of heart disease, where two small tumours the size of filberts were found attached to the mitral valves, I found internally numerous exudation and pus cells. The character of the latter were determined by the peculiar nuclei which were made apparent on the addition of acetic acid. In both cases it is evident that corpuscles had been formed in the coagulum.

* Gerber's Anatomy, note, p. 31.

Now, in cases of severe injuries, it is very probable that a similar process goes on, not only in the exudation thrown out, but in that portion of it which, under other circumstances, would have closed up the ruptured vessels. Pus, then, directly enters the vessels, and is carried into the torrent of the circulation.* What now happens may be well described in the words of Zimmerman. "If the entire pus corpuscles have been taken up by the venous system, they either reach the heart and pulmonary artery into the capillary structure of the lungs, or, in case the purulent deposition was seated in organs whose veins formed the *vena porta*, they reach through these into the capillaries of the liver. Now, as the pus corpuscles are in general too large to pass through the fine capillary network in the lungs and liver, it is evident that, for this reason, they must begin to stop here, to accumulate, and to occasion a stasis as foreign irritants. These, then, form new pus depositions, which progressively become greater from the constituents of the blood, and of the parts of the tissue capable of it. From this simple cause, it is easily explained why secondary abscesses form so readily in the liver and lungs. If the pus deposited in the liver, and newly formed, be taken up by the hepatic veins, these bring it into the heart and into the lungs. If it be taken up from these by the pulmonary veins, it may be deposited in every other organ to which the blood comes from the left ventricle. In this case secondary abscesses may form in the brain, in the kidneys, in the spleen, &c., and pus may even be discovered in the urine."†

Purulent matter formed within the vessels, the result of arteritis or phlebitis, produces similar results in a like manner.†

VII.—THE CIRCUMSTANCES WHICH INFLUENCE THE TERMINATIONS OF INFLAMMATION.

It becomes very important to inquire what are those circumstances which induce the different transformations of the exudation, such as we have previously described them, and when we may expect lymph, softening, suppuration or permanent tissue to follow the inflammatory process. A satisfactory elucidation of this subject must be intimately connected with our mode of treatment, inasmuch as a knowledge of

those circumstances which favour or retard one more than another, will enable us in particular cases to apply our remedies so as best to assist the intentions of nature.

It at once becomes evident that the essential cause of organization lies in the vitality and peculiar properties of the exudation itself. This, like every blastema, as the egg in animals or the seed in plants, possesses the power of development, and passes into organization when placed in circumstances favourable to growth. It is not connected with the causes of the inflammation, as these, however various, whether chemical, mechanical or vital, give rise to similar results. The origin of this function, therefore, must be sought in the vital properties of the exuded blood plasma alone. The same general circumstances also influence the development of the exudation as influence organization in every species of blastema, whether vegetable or animal. The most important of these are temperature, the presence of moisture, and certain changes of the atmosphere.

That temperature exercises a most powerful influence on the growth of plants, that is, on the development of the cells of which they are composed, is a well-known fact. All vegetation requires a temperature between 0° and 100° Fahrenheit. It is also well established that vegetation is more rapid in elevated than in low temperatures, and horticulture teaches us that its proper regulation will enable us to accumulate within a small compass the plants of every climate. The importance of temperature in the growth of animals is equally well marked, and may be observed in the process of incubation, and the care with which the mother instinctively guards her young from the approach of cold. Even in man, the fact that he attains maturity earlier in warm than in cold climates, is only a further illustration of the same general law. Growth, as we have seen, only consists in the evolution and further development of nucleated cells, and the same laws which apply to this process in plants and animals in a state of health, apply to them in disease.

It has long been recognized in practical medicine, that cold and heat locally applied, are amongst the most powerful means of combating inflammation. It is well known that the first checks the inflammatory action, and retards the formation of pus, whilst the last favours the passage or the exudation into suppuration. This is only acknowledging that cold ob-

* See translation of Zimmerman's paper, *Med. Chir. Review*, July, 1844, p. 152.

† See translation of Gruby, *Obs. Micros. Journal*, Vol. ii. p. 266.

whilst heat facilitates the passage of the exudation into nucleated cells. In short, for the same reason as the horticulturist who wishes to bring forward a plant, places it in a hot house, so the surgeon who desires to bring on suppuration applies hot poultices and fomentations. From these considerations the indications for the especial application of cold and heat in inflammation may be at once deduced.

That moisture is as necessary for growth as a certain temperature may be proved from like observations in plants and animals. I need not allude to the necessity of supplying water in order to secure the growth of the former, or the circumstance that in every ovum a fluid surrounds the yolk, or portion where nucleated cells are actively developed. In the same manner we have seen that a rapid exudation and consequent excess of fluid favours the evolution of isolated cells, as those of pus or of plastic lymph, whilst its diminution is more favourable for more permanent growths. The formation of pus seems to be more especially favoured by the constant addition of fluid, and hence probably its common occurrence in all those situations where this takes place, as from the walls of abscesses, the surface of mucous membranes, ulcers, &c. For this reason suppuration is impeded, and union by the first intention favoured, if, before uniting the edges of incisions, we wait till the extravasation of blood has ceased, and exudation has occurred. Hence may be explained the practice so long prevalent in the Edinburgh School of Surgery of not sewing together the flaps till some hours after amputation, and glazing has taken place. On the other hand, moist applications conjoined with heat have been found most favourable for advancing suppuration.

It was supposed by Hunter that the presence or absence of atmospheric air exercised an influence on the results of inflammation. To the seclusion from air he ascribed the production of lymph, as in shut cavities, whilst that of pus, according to him, is favoured by an exposure to it. A free surface, as exists on the skin or mucous membranes, as they favour an effusion of serum or excess of moisture, so they naturally favour the passage of the exudation into pus or isolated cells. Hence, probably, the entrance of air into large abscesses, so much dreaded by surgeons, is not injurious from any poisonous influence it exerts, as from the circumstance that it keeps the walls separate, and thus favours an excess of exudation and organization.

That changes in the atmosphere, independent of temperature and moisture, exert a powerful influence in advancing, impeding, or destroying growth, becomes evident on paying attention to its effects throughout all animate nature, vegetable as well as animal. Crops which have called forth the utmost skill of the agriculturist, and which seem to promise the best return, slowly or suddenly become withered; their further growth is checked, and they die, and this not owing to any fault in the soil or in the nature of the seed, but to some yet undiscovered change existing in the atmosphere. So in particular seasons of the year, or in certain localities, we observe epidemic or hospital gangrene, and witness the same exudation which, under other circumstances, would become organized, together with the structures involved in it, &c., become mortified and thrown off from the economy. Of the nature of this atmospheric influence or malaria we know nothing, but that it exists, observations such as we have alluded to sufficiently prove.

Why the exudation should not always undergo the same transformations, or pass into the same organization, it becomes very difficult to determine. The blood plasma exuded throughout the body, when first poured out, is, in all tissues, essentially the same, and yet we see plastic, exudation, and pus cells formed in it, and frequently cellular tissue, bone, or other structure. Occasionally we see the same exudation partly transformed into pus, and partly into permanent tissue, as on the surface of an ulcer. All that can be said on this subject appears to be, that the same vital laws, which, in a healthy state of the economy, produce from the same blastema nucleated cells, passing into fat, muscle, nerve, bone, and so on, induce, in a state of disease, results equally dissimilar from the same cause. Both research and observation, however, indicate that there are certain circumstances connected with the *individual* which exert a considerable influence in determining the kind of organization which takes place in the exudation. These circumstances appear to be connected, 1st, with the elementary structure of the tissue; 2d, with the vital power of the whole organism; and, 3d, with the progress of the inflammation. As these are points of great practical importance, I shall shortly consider each in succession.

1. The surrounding elementary structures exercise an evident influence on the further development of the exudation.

Thus, blood-plasma effused in the neighbourhood of cellular tissue, is again developed into cellular tissue, as we see in granulations, in the greater number of regenerations and healing of wounds. Exudation in the immediate neighbourhood of bones, or into their substance, is changed into bone. Even the primitive fibres of nerves have been said to be capable of regeneration when once divided. Serous membranes, shut sacs, with vessels and epithelium, may be newly formed from exudation effused on serous surfaces. Every tissue is capable of being hypertrophied, when the exudation is poured out slowly, as in chronic inflammations. In all these cases the new pathological formation depends apparently upon the influence the surrounding parts possess over the other circumstances which govern the development of the exudation.

2. The vital power of the whole organism has a most undoubted influence over the further development of the exudation. When inflammation is followed or accompanied by general loss of strength, it does not become organized, or is very imperfectly so. In such cases the exudation breaks down into an undetermined granular mass, although it sometimes exhibits an imperfect tendency to cell formation. Diminished energy of the vital power, therefore, or certain changes in the constitution of the blood, tends to reduce and destroy the further development of the exudation. This is very well observed in scrofula, in which disease, whilst the fibrin of the blood is diminished, the albumen is in excess. Here, when suppuration takes place, it occurs slowly, and the pus cells are found to be imperfectly developed. Instead of being round and rolling freely on each other, they are angular, collect into masses, and are mixed with numerous granules. In parenchymatous organs, the occurrence of tubercle is common, which consists of numerous granules, with a few imperfect attempts at cell formation. In syphilis, scurvy, and other cachectic constitutions, it is well known that the exudation passes very slowly into organization, and that it frequently dies, causing ulceration. Moreover, the difficulty with which fractures and wounds heal in individuals badly nourished, in old age, or in such as labour under putrid diseases, as typhus or jail fever, sufficiently

demonstrate the influence of the general vital powers on the development of the exuded blood plasma.*

3dly. The rapidity with which the exudation takes place, and its amount, exercises a powerful influence on its organization. When the inflammation is acute, when the exudation occurs in considerable quantity, and the power of the constitution offers no check to the development, it passes readily into exudation, plastic and pus cells, and if there be loss of substance this is quickly restored. The quantity and quickness of the exudation favours its transformation into one of the three kinds of isolated corpuscles, according to the texture of the part. On the other hand, when the inflammation is chronic, and the exudation is poured out slowly or in small quantity, it possesses an evident tendency to pass into a higher state of organization, and the cells are developed into fibres, or some of the permanent tissues. Hence union by the first intention from the small quantity of the exudation—union by the second intention from the slow progress of the organization, that which takes place rapidly being thrown off in the form of pus. Hence also the slow formation of adhesions and dense membranes in shut cavities. Lastly, when the exudation is poured out with great slowness, tissues are formed which are identical with those existing in a normal state, giving rise to hypertrophy in different organs. In this manner the violence of the inflammation and amount of exudation exert a great influence over the products produced, as has been long recognized in pathology by the terms adhesive inflammation, suppurative inflammation, &c.

Such, then, appear to be the more important circumstances which influence the terminations of inflammation.

We have now endeavoured to describe the principal phenomena which characterize the inflammatory process, and the manner in which its products are produced. The early phenomena, consisting of contraction, succeeded by dilatation of the capillaries, are analogous to what are called spasms, and paralysis in the muscular tissue. The enlargement of the vessel permits a greater quantity of blood to enter it, whilst its corresponding increase of tenuity permits fluids to be exuded through its walls, which, in a state of health, were retained. This increased exosmosis, the approach of the yellow corpuscles to the sides of the vessel, and the stoppage of the blood, we endeavoured

* May not the difficulty with which wounds heal by the first intention in Paris, be ascribed to a constitutional cause?

to show, could only be explained by supposing the existence of a vital power causing an increased attraction between the blood and surrounding parenchyma. This hypothesis is, of course, only intended to express a certain series of facts, in the same manner that we speak of electrical attraction and repulsion, or of gravitation, as explanatory of well-known occurrence.

The early phenomena may be followed by the extravasation of blood, by the effusion of serum, or the exudation of blood-plasma. The latter constitutes the essential phenomenon, and is invariably present, serving to distinguish inflammation from mere congestion and all other morbid processes.

The blood-plasma exuded, and the textures imprisoned in it may die and pass into decomposition, rapidly, constituting mortification, or more slowly causing ulceration. On the other hand, it may assume an active power of growth, in which case different kinds of nucleated cells are formed, which either remain isolated or pass into organization of tissue. Inflammatory softening is caused by the formation of exudation cells; organizable lymph by the formation of primitive filaments, mixed with plastic corpuscles, and suppuration by the formation of purulent matter corpuscles. When there has been loss of substance, the exudation passes partly into cellular tissue, and sometimes into other elementary textures. This, however, always by the process of cytogenesis. Occasionally the exudation is absorbed either directly before its coagulation, or more commonly after this, by the disintegration of the isolated and temporary corpuscles which are formed, so that the coagulated blood-plasma is again rendered fluid and molecular, and capable of re-entering the vessels. These different results constitute the subsequent phenomena, or terminations of inflammation.

Lastly, we have seen that the vitality of the exudation is influenced by the existence of a medium temperature, moisture, and the state of the atmosphere, and that the kind of organization into which it may pass is dependent, 1st, On the elementary structure of the tissue in which it occurs; 2d, By the vital power of the whole organism; and 3d, By the progress of the inflammation.

VIII.—CONCLUDING REMARKS.

Before altogether closing our considera-

tion of the pathology of inflammation, it will be well to allude to one or two points which we may now discuss with some hope of arriving at a satisfactory conclusion. One of the first pathologists, and one of the first physiologists in Europe, viz., Andral and Magendie, have both declared that the word inflammation should be banished from medical nomenclature, "created," says Andral, "in the infancy of science, this expression altogether metaphorical, was destined to represent a morbid state, in which the parts appeared to burn, to be inflamed, &c. Received into general language without any precise idea having ever been attached to it, in the triple relation of symptoms which announce it, of the lesions which characterize it, and of its intimate nature, the expression inflammation is become so very vague, its interpretation is so very arbitrary, that it has really lost its value, it is like an old coin without an impression, which ought to be removed from circulation, as it only causes error and confusion. Magendie remarks, "when we are called upon to pronounce the word inflammation, it is rather to criticize it than to attach to it any definite ideas." Again, he says, "one could fill an entire book with all the ideas which represent the word inflammation, for it is synonymous with the word disease."

Andral, after having pointed out the confusion resulting from the term inflammation, has replaced it by the word *hyperæmia*, or excess of blood. We evidently, however, gain nothing by this substitution, as it is one of words, not of ideas, and the term congestion, already in use, is synonymous with it. Magendie, in ridiculing the word inflammation, has never attempted to replace it in any way. Eisenmann has endeavoured to substitute the word *stasis*. But this only means stoppage of the blood, and may take place in the veins as well as in the arteries, without exciting any of the phenomena called inflammatory. Hence it has been the object of British pathologists to give precision to the old term inflammation, rather than change it for another, perhaps more unsatisfactory.

It is evident, however, that the symptoms of pain, heat, redness, and swelling, are no longer sufficient to indicate inflammatory action. All these may depend upon simple congestion alone, and they may all be absent even when an inflammation has been sufficiently powerful to destroy life, as in the substance of the brain. Neither can we any longer retain the vague

ideas which exist with respect to its pathology. Most pathologists, indeed, on being questioned, are obliged to acknowledge that of this they know nothing, and practical men, though they profess themselves capable of detecting its existence, are all ready to confess their ignorance of its nature.

One of the most powerful opponents of the ideas of Andral and Magendie, is the present distinguished Professor of the Practice of Physic in this University. Dr. Alison says, "A peculiar perversion of nutrition or of secretion, we hold to be essential to the very existence of inflammation; and all descriptions, and all attempts at explanation of the changes to which the term is applied, if they do not include this, their most essential peculiarity, we must regard as necessarily and fundamentally defective."* Now it is this perversion of nutrition that I hold we must regard as the principal feature in all the phenomena of inflammation. In order, however, to understand what is meant by perversion of nutrition, it evidently becomes necessary that we should have a clear idea of what is meant by healthy or normal nutrition.

We have taken great pains to point out that a healthy nutrition consists, 1st, in a healthy state of the blood; 2d, in a healthy exudation of blood-plasma; and 3d, in the formation of nucleated cells, passing into the healthy structures of the organism, as fat, bone, muscle, and nerve. In inflammation, however, we have seen that there is, 1st, an unhealthy state of the blood; 2d, an unhealthy exudation of blood-plasma; and 3d, a formation of nucleated cells, passing into structures foreign to the organism, as softening, lymph, and purulent matter, and cicatrix. Surely, then, we are warranted in saying that inflammation is nothing more or less than a form of abnormal nutrition.

Dr. Alison further observes, "It is true that the various effects which we ascribe to inflammation, adhesion, suppuration, ulceration, and gangrene, are very different from one another, and that we cannot satisfactorily point out the cause or even the mode by which each is effected." It is hoped, however, that in the preceding pages, not only has a sufficient cause been adduced, but that the mode in which the different terminations of inflammation are produced has been described from actual observation. That is, in the same manner that Schleiden in plants, and Schwann in animals, have

indicated the steps of normal nutrition, owing to the formative influence of a vital blastema, so it has been endeavoured to point out the mode in which abnormal nutrition acts in producing the various results of inflammation, from the transformations of the exudation.

It may be thought by some that this doctrine contains nothing new,* that many authors have said the same thing; that Andral, Lobstein, and numerous others in their works on pathology, have distinctly spoken of increased and diminished nutrition: and that the term morbid growths, as applied to tumours, is a sufficient proof of this. No doubt the idea of a morbid nutrition has occurred to writers on pathology, yet how have they applied such ideas to the phenomena of inflammation? So far from their having conceived purulent matter to be connected with this process, they supposed it to be secreted from the blood, in some unknown way, in order to be removed from the system. That is to say, they classified pus with the bile, urine, milk, and sweat, fluids secreted by glands to be excreted from the body. They had no idea that purulent matter was the result of an active process of nutrition, formed and developed in exuded blood-plasma as from a blastema. Even an authority so late as Gerber describes the pus corpuscle as being formed by the breaking up of the exudation cell, and Travers speaks of lymph being the secreting organ of purulent matter.† No one has clearly distinguished the difference between the cells found in pleuritic lymph and those of purulent matter, although the former have been accurately figured by Gulliver and Vogel. Again, inflammatory softening was confounded with that lesion which is the result of maceration, and no means existed of distinguishing one from the other. The identity between exudation corpuscles and the granular bodies of the colostrum was not known.‡ In short, it was utterly impossible that, before the doctrine of growth by cells, they could have formed the most remote conception of the manner in which these morbid appearances were produced. Even the steps of healthy nutrition were unknown; how, then, could they explain the morbid phenomena? Their hypothesis, however, remained, and as so

* My first paper on this subject was read to the Medico-Chirurgical Society of Edinburgh, November, 1842, and an abstract of it was published in *Cornack's Journal* for December following. It is referred to by Henle in his Report, p. 198.

† On Inflammation, p. 122.

‡ See Wagner by Willis, p. 429.

* Lib. of Med. p. 53.

often occurs in the history of science, what at one period was the merest hypothesis, and only the offspring of a luxuriant imagination, becomes confirmed by observation, and, after a time, received as established truth. I shall be satisfied if, in the foregoing essay, the mode in which this anormal nutrition takes place has been clearly shown, and the various phenomena of inflammation satisfactorily demonstrated to be explicable according to the present state of science.

It may further be objected, that the term anormal nutrition, if correct, can only affect the results of inflammation, and not inflammation itself. But what is inflammation unconnected with exudation? Dr. Alison directly tells us that he can form no idea of inflammation unconnected with effusion. If we take away the results, we have only congestion or the early phenomena remaining, to which we can never apply the term. But it is evidently erroneous to split one process into two; and to call the first part the cause and the other the result. Besides, where shall the division be made? Who has ever thought in healthy nutrition of making such distinctions? The whole is one process, consisting essentially in the exudation of blood-plasma, and of its subsequent transformations, and so it is maintained in anormal nutrition; the exudation and subsequent changes are one process also.

If, however, the word inflammation must be used (and it may be questioned whether the time has yet arrived for removing it altogether from practical medicine), it must be limited to that series of actions which terminates with the exudation of blood-plasma in unusual quantities. In this sense it may always be employed with propriety, and we may always understand by it that a congestion has terminated in exudation, which may die, or become organised, be absorbed, or pass into permanent tissue, according to those vital laws which govern normal as well as anormal nutrition.

(Concluded.)

NARCOTICS IN INSANITY.*

By far the most useful remedies in active mania, after the system is prepared for their use, are narcotics.

It is generally conceded at the present day, that the condition of the brain in ma-

* Dr. Woodward's Annual Report to the Trustees of the State Lunatic Hospital at Worcester, Mass.

nia, is not inflammation, but rather a high state of irritation, increasing its activity and that of the nervous system generally. The symptoms are sometimes equivocal, and are calculated to mislead, but close observation and the effect of remedies conspire to show that the brain is not in a state of inflammation. For this state of the brain narcotics would seem to be the most natural remedies, and experience shows that such is the fact. In many cases, this state of excitement will, after a time, give place to more healthy and natural actions, and the disease will be cured without the use of remedies; but in a majority of cases the symptoms yield more readily and favourably where narcotics are prescribed.

MORPHINE. The remedies of this class most extensively useful are sulphate of morphine and other similar preparations. The exact time, circumstances, and cases when these remedies can be applied with the greatest benefit must depend upon the judgment and experience of the medical adviser. On this, doubtless, depends their greater utility in the hands of some men than of others, though many more cases, suitable for their use, may have fallen under the care of one man than of others who have management of institutions. Other practitioners have generally but a limited experience with them, as insanity, at the present day, is but little treated by medicine except in the institutions especially devoted to this class of patients.

The morphine should usually be administered in solution, beginning with greater or less doses, according to the nature of the case and the urgency of the symptoms. Moderate doses should generally be first tried, and they may be cautiously enlarged till the system is under their influence, and the excitement is controlled. The effects should be carefully watched, and if any unpleasant or unfavourable symptoms occur, the remedy must be changed, modified or combined, so that these effects may be obviated. In a large majority of the cases no such effects will occur. When its effect is favourable, it exercises a controlling influence over the symptoms, and the patient becomes more quiet, rational and natural in every respect. These effects once gained, can in most cases be maintained till the recovery is complete. Sometimes symptoms occur which require that the remedy be increased, but more generally it can be cautiously diminished, and after a time be withdrawn, and the system suffer no inconvenience, and the insanity proved to be cured. The time that this remedy should be used varies in different cases, from a few weeks to many months.

In the few cases in which it is necessary to

administer narcotics, in large doses to produce the most decided impressions, the tincture of opium is better than the salts, but generally the salts are more safe and agreeable in their effects.

In some cases, the Dover's powder is the best form in which this remedy can be administered, especially in the early periods of disease, when the skin is inclined to increased temperature and unnatural dryness.

For twelve years this remedy has been extensively used in this institution with the most marked success.

The manner in which the morphine has been used in this and other hospitals in this country, continuing it till the symptoms have subsided, then omitting and seeing them return, then again and again removed by the renewal of the medicine, affords unequivocal evidence of its power to subdue maniacal excitements, relieve the delusions of the insane, and restore the brain and nervous system to a sound and healthy state.

Most English writers speak of the extraordinary effects of this remedy in isolated cases, but caution against its general use. But the practitioners in the English institutions have learned, by experience, to rely upon it with as much confidence as those in this country have for a long time done.

I quote the following from the Report of the British Metropolitan Commissioners.

"Preparations of opium and other sedatives, given in repeated and sufficient doses, are thought by the best practitioners, who conduct the medical treatment in the LARGE ASYLUMS, to be of great efficacy in subduing excitement and agitation, and, conjoined with the use of baths, cold applications to the head, and the use of antispasmodics and aperients are said to promote the cure of mania in the early and acute stages.

It is rare that any benefit arises from single doses of opiates at night to produce sleep, unless the system is kept under the influence of them the whole time. In the most violent forms of disease, the doses should be repeated once in four or six hours. The medicine failed to gain any permanent credit while it was only prescribed at night, in large doses, for the purpose of procuring sleep.

It is important to know, in this connection, the symptoms which contra indicate the use of this class of remedies. When the skin is hot and dry, the tongue covered with a white fur, or dry, smooth and red, the bowels obstinately constipated, the pupil of the eye greatly contracted, and the vessels of the conjunctiva injected with blood, the symptoms must be changed before the morphine can be used with safety or advantage. With the dry, red, smooth tongue, which attends comparatively few cases, the use of opiates is generally unfavourable, but the other symptoms, above enumerated, can commonly be removed, or so far obviated, in a few days, as to make them unexceptionable.

I have spoken thus far only of the use of the

morphine in maniacal excitement. In some forms of melancholy; especially where there is great mental anguish, and strong suicidal propensity, its operation is equally beneficial, often procuring relief in a short time, and carrying the patient along most favourably to health. In this form of disease, it is rarely necessary to use the remedy in large doses, but whatever is prescribed should be at regular intervals, from three to six times in the twenty-four hours.

DATURA STRAMONIUM. Some practitioners place great reliance on the use of stramonium in mania. In some cases its effects are very favourable, in others it not only disappoints our hopes, but sometimes actually coincides with diseased impressions, and aggravates the symptoms. The late Dr. Todd used it successfully, and his testimony is a host in favour of any medicine. In my hands, in ordinary cases, it has not proved very successful.

In cases of insanity connected with epilepsy, and especially in epilepsy disconnected with insanity, I have seen most excellent effects from this remedy. It is rare that a case of insanity complicated with epilepsy, entirely recovers, but under the use of stramonium, the symptoms of both are often greatly diminished in force and frequency. In many cases in which the paroxysms of epilepsy have recurred frequently, they have, for months, been wholly suspended by the use of the tincture of stramonium.

I have now in my care a young woman who had for some years been subject to epileptic paroxysms, three or four times a week for the last two years she has had turns of violent mania, with the most determined purpose to commit suicide. At each recurrence, she would beat her head against the wall of her room, if otherwise restrained, so forcibly as to inflict severe wounds. She was put upon the use of stramonium soon after she came to the hospital; after a considerable time the severity of the paroxysms abated, and the insanity was less violent. It is now more than ten months since she has had an epileptic fit or a severe paroxysm of insanity. Her health has improved in every respect; she is more or less insane at all times, but is not violent. Instead of being one of the most troublesome patients in the house, she is quiet, harmless, and even useful, as she is industrious, and capable of doing much profitable labour. The stramonium is still used in such doses as slightly to impair the vision.

This remedy rarely makes any favourable impression on epilepsy unless it be used in sufficient doses to dilate the pupils of the eye slightly, and produce some difficulty of vision more or less of the time.

In cases of insanity in which the condition of the brain is similar to that which exists in epi

lepsy, the stramonium would doubtless do good, but to be able to distinguish these cases, requires discrimination and experience which few men possess.

The best form of administering the Stramonium is in tincture of the seeds, or tincture of the extract.

CONIUM MACULATUM. The extract of conium, either alone or in combination with mineral tonics, is a valuable remedy, and has proved useful in some forms of insanity. As a means of removing maniacal excitement it is worthy of little confidence. But for some forms of melancholy, and especially chronic disease of the digestive organs, with melancholy or neuralgia, it often proves very useful. It is a deobstruent narcotic of no inconsiderable power. In cases of melancholy complicated with disease of the stomach and torpor of the liver, attended by uneasiness, restlessness, watchfulness, and nervous pains, it often affords great relief, and is auxiliary in accomplishing a cure. In pure neuralgia, Conium combined with Iron, Quinine, Nitrate of Silver, or the Arsenical solution of Fowler, often proves a very efficient remedy. It may be advantageously used for a long time, in large doses, without danger. It is only in large doses that it is useful in any case, and particularly as a deobstruent. The *minimum* dose is ten grains three times a day, the *maximum* dose, two, three, or four drachms, as frequently repeated. I have rarely found any advantage from doses less than fifteen or twenty grains, repeated three or four times a day, but commonly give from thirty to forty grains as frequently repeated.

With the Carbonate, or Red Oxyd of Iron, it is more frequently prescribed than in any other way. These two medicines, when combined, qualify each other, and the combination seems to increase the efficacy of both. There is considerable difficulty in procuring a good quality of this extract, it should be made of the expressed juice of the plant, evaporated in a sand bath.

When used in large doses, the extract of Conium produces temporary vertigo, and a *heavy, dull* pain over the eyes and across the forehead. If this effect is never produced by the medicine, the dose is either too small or the medicine of a bad quality.

Glandular tumours sometimes disappear quite suddenly under the use of this remedy. A lady came under my care with the deepest melancholy, under the false impression that she had a hole in her stomach, and that all the food she took was impacted in the abdominal cavity. She had had for two years or more cessation of the menses, and an uterine tumour as large as

a quart bowl. This tumour gave her little trouble and occasioned no anxiety, the other sufferings and alarm occupied all her thoughts, and made her most unhappy. She took the extract of Conium in combination with the Red Oxyd of Iron, in doses of from thirty to forty grains, three times a day, with sulphate of Morphine, particularly at night. After some months the patient got better, the delusion vanished, the health was completely restored, and what was quite surprising to all who had any knowledge of the case, the tumour gradually diminished and finally entirely disappeared, and the healthy functions of the uterus were restored. There has been no return of either disease since, a period of five or six years. The lady now enjoys uninterrupted health.

CAMPHOR. This medicine has alternately been in favour with, and lost the confidence of, the medical practitioner, for centuries past, and its merits are now very unequally estimated by men of experience in the treatment of insanity. In the large doses in which it has sometimes been used, it has doubtless produced very considerable effect in allaying irritation and procuring sleep. But it is not frequently used in this way, and when it is, its effects are not as certain or as safe as other medicines now more extensively relied upon. The use of Camphor is now principally confined to a combination with other moderate narcotics, to remove slight irritation of the nervous system, and promote sleep. I have used it in various forms, and in large and small doses, without any favourable results. In dysmenorrhœa connected with insanity, or without it, it is often a useful remedy, in doses of from five to ten grains, and frequently relieves from extreme suffering. The tincture is used externally to the head with temporary relief, and is perhaps more useful than diluted alcohol alone, though generally less efficacious than cold water.

Camphor will probably never again receive the encomiums which it has occasionally had in times past, as a remedy for insanity, but it has a limited usefulness in some cases, and will not be likely to be wholly discarded.

HYOSCYAMUS. The extract of Hyoscyamus has been extensively used as a remedy in maniacal excitements. It is probably at this day more extensively used, in this country and in Europe, than any other of the narcotics, and until the preparations of morphine were extensively introduced, it stood at the head of the list of narcotics, in this and similar diseases.

It is a useful medicine in some cases of moderate excitement, in disturbances of the nervous system, and sleeplessness. In combination with tonics, alteratives and other narcotics, it is useful to allay irritation and produce a quiet and equable state of the system in many forms of mental disease.

In high maniacal excitement, and the extreme suffering of some cases of melancholy, it is only

an auxiliary to the more powerful and efficacious remedies that we have before considered. Its virtues have probably been overrated, but it is worth a trial in many forms of disease that do not require potent remedies. I hardly know of a remedy more likely to induce sleep in simple watchfulness, than a combination of Hyoscyamus, Camphor, and Lupuline, in equal proportions, from two to five grains each for a dose, repeated if necessary. In combination with Nux Vomica and Nitrate of Silver it often proves a valuable remedy.

NUX VOMICA, BELLADONNA, VERATRINE. These remedies are useful in some conditions of the nervous system; but, so far as I have known, have not been extensively employed in insanity.

Nux Vomica is useful in palsy, relaxation of the muscular tissues of the stomach, bowels, and bladder, as well as in external muscular weakness. I have used it in cases of melancholy with flatulency and general relaxation of the muscular tone. In my practice it often enters into combination with Nitrate of Silver, in affections of the heart, in epilepsy, neuralgia, and chorea. It is a powerful remedial agent, and may be used in larger doses than is usually prescribed. The first unpleasant symptom arising from its use, is a sense of constriction of the stomach, which is specific, and shows that the medicine is producing some effect.

My own experience of BELLADONNA is quite limited. It is very apt to affect the vision considerably before it affects the nervous system generally, and this symptom sometimes coincides with the illusions of disease, or creates visual illusions which are likely to disturb the insane. This disagreeable effect is so often produced by it as to operate unfavourably to its extensive use.

VERATRINE is probably not strictly a narcotic, but is a remedy which affects the nervous system in a surprising manner. It will often produce nausea and vomiting before it exhibits any very marked effect as a general remedy. When applied externally in the form of ointment or strong tincture, it relieves neuralgic pains in a surprising manner, usually producing a prickling sensation of the part to which it is applied. When used internally, it has in some cases produced strangury.

SYRUP OF BARK.

On a new and more efficient Preparation of Cinchona Bark.

By M. DONOVAN.

The following are the quantities of materials to be employed, and the calculations of the result:

Let eight ounces of yellow bark, in coarse powder, be digested with a pint of proof-spirit for a week, in a close vessel,

with frequent agitation. The tincture is to be fully extracted by the screw-press; the residuum is to be digested with another pint of proof-spirit for a week, and the tincture again expressed. The residuum is now to be boiled for half an hour with a pint of water, and the decoction strongly pressed out. The boiling of the residuum a second and third time with a new pint of water is to be performed in the same manner; and then the three decoctions, mixed, are to be evaporated by heat to eight ounces. It will be much better if this be done in a vacuum. The tinctures, mixed, are to be distilled or evaporated until eight ounces remain; and these, still boiling hot, are to be added to the evaporated decoction. A pint of liquid will thus be produced, the chief ingredient of which is dikinate of quinia. Its quantity may be determined as follows:

If one French pound (7559 troy grains) of yellow bark furnish, on an average, 200 troy grains of hydrous disulphate of quinia, containing 143.62 grains of anhydrous quinia, this last, while existing in the bark as dikinate of quinia, must have been in combination with 78.43 of dry kinic acid; the amount of dry dikinate of quinia in each French pound of yellow bark being thus 227 troy grains, or 115.34 grains in eight troy ounces, namely, the quantity from which the above-mentioned pint of bark liquor was procured.

The other ingredient of which notice is here to be taken, is kinate of lime. The quantity of this in eight ounces of yellow bark, and, therefore, in a pint of bark liquor, will be 268.8 grains, when the bark contains seven per cent. of this salt, as it ought. Now 268.8 grains of hydrous kinate of lime, consist of—

| | |
|----------------------------|----------------|
| Anhydrous kinic acid . . . | 14.973 grains. |
| Lime | 24.52 " |
| Water | 94.55 " |
| | <hr/> |
| | 268.8 |

And 24.52 grains of lime require for saturation 31.53 grains of anhydrous oxalic acid, which would be furnished by 315.31 grains of anhydrous dinoxalate of quinia—this last salt consisting of 31.53 grains of anhydrous oxalic acid (equal to 55.17 of crystals), combined with 283.78 of anhydrous quinia.

The result of the double composition of 263.79 grains of crystallized kinate of lime by 315.31 grains of anhydrous dinoxalate of quinia, would therefore be 56.05 grains of insoluble oxalate of lime, and 433.51 grains of anhydrous dikinate of quinia, thus—

| | |
|----------------------------|----------------|
| Anhydrous kinic acid . . . | 149.73 grains. |
| Anhydrous quinia | 283.78 " |
| | <hr/> |
| | 433.51 |

Thus, by adding 315.31 grains of anhydrous dinoxalate of quinia to the pint of bark liquor above mentioned, containing 268.8 grains of

native kinate of lime, we produce 433.51 grains of dikinate of quina. And as that liquor naturally contained 115.34 grains, as already shown, the total quantity of dikinate of quina is now 548.85 grains in the pint of liquor produced from eight ounces of yellow bark.

Having therefore added 315.31 grains of anhydrous dioxalate of quina (or rather its component parts, already estimated above) to the pint of bark liquor, and boiled for a few moments, the liquor is to be made into a syrup by adding twenty-one troy ounces of refined sugar, and four ounces of best gum arabic, both in powder, and previously mixed. The whole is to be kept stirring until solution be effected: and if the resulting syrup, when cold, do not amount to thirty-two ounces measure, that quantity is to be obtained by the addition of water. When cold, the syrup is to be filtered through flannel, which is the best filter for syrups; what remains on the filter is inert matter.

In each ounce measure of this syrup, there are 17.15 grains of anhydrous dikinate of quina. To compare this strength with that of common decoction of bark, we have only to consider that, if two ounces of yellow bark be boiled in 32 ounces of water, and that the whole dikinate of quina were thereby extracted, the quantity would amount to, but 28.83 grains, whereas in an equal measure of the syrup there are 548.85 grains—that is, the syrup is nineteen times stronger than the decoction. But as the whole active matter of the bark is not extracted, the syrup is still stronger. By sweetening the decoction equally to the syrup, the latter being previously diluted with the quantity of water equivalent to that contained in the decoction, I found by the taste that the syrup is about thirty times more bitter than the decoction. Hence, one drachm of syrup is equal in power to about three ounces and six drachms of the decoction; and it would be also equal to the 113 grains of bark in substance from which the decoction is obtained, but that the whole of the active matter is not extracted in boiling. As one drachm of syrup contains 2.144 grains of dikinate of quina; and as that quantity of the salt is contained also in 71.4 grains of powder of bark, it follows that one drachm of syrup is equal to three ounces and six drachms of decoction, and to 71.4 grains of powder of bark.

To facilitate calculation, I have hitherto supposed that yellow bark was to be employed for this syrup. It has been already shown in this essay that, in the opinion of good judges, cinchonina is equal to quina as an antiperiodic. Red bark contains both of these alkaloids, often in equal quantities, along with a much greater ratio of that highly important medicinal agent, the peculiar tannin of bark, than is found in the other species. It was, indeed, long ago accounted the best of the barks by Dr. Saunders; and Dr. Skeete proved that it imparted more of its virtues to menstrua than any other. A syrup prepared from red bark will contain all

the virtues of the three barks, and perhaps in a greater degree than a syrup made from the other two conjointly: some might prefer a mixture of red and yellow barks in equal quantities.

It remains to offer a few suggestions relative to the pharmaceutical employment of this syrup. In general it may be used in any mixture of compatible liquids, when the powers of bark are required, and when the other liquids are already sufficiently voluminous, and would be altogether too bulky if decoction of bark were employed. Thus, in the simultaneous exhibition of decoctions of bark and sarsaparilla, in equal quantities, the smallest efficient dose of the mixture is six ounces three times a day. By altering the formula to fifteen and a half ounces of decoction of sarsaparilla, and five and a half drachms of syrup of bark, the same powers are exhibited in half the foregoing bulk.

Hitherto there has been no way of exhibiting bark in its full powers, except in this state of powder, which to most persons is so disgusting a dose that it is rarely prescribed. The following contains all its energy in a state of perfect development and activity, and is a pleasant carminative tonic:

Cinnamon water, six ounces and a half; syrup of bark, half an ounce; compound tincture of bark, an ounce. An ounce measure of this mixture is equivalent to forty-two grains of bark in substance.

When bark and iron are indicated, the following is the formula in which the least chemical action takes place between the tannin and the iron, as no discoloration appears for several days:

Precipitated carbonate of iron, syrup of bark, of each an ounce. Mix. Dose, the size of a small nutmeg.

The strength of this syrup is such, that one drachm is a full dose, either by itself or in water. Aromatics, such as anise or fennel, are said perfectly to mask the bitterness of preparations of quina. M. Pierquin says, that thirty-two grains of carbonate of magnesia conceal the taste of six grains of sulphate of quina without interfering with its virtues.

To conclude, this preparation of bark seems deserving of the attentive consideration of physicians, as it contains all that is valuable in that medicine, in a state of perfect preservation and full energy. It presents the active ingredients exactly in their natural state, which good judges have declared to be, in many forms of disease, absolutely necessary. It contains nothing but what is an unaltered proximate princi-

ple of bark. The form is commodious, not liable to spoiling, is less disagreeable than any other, and may be rendered even agreeable. — *Pharmaceutical Journal*.

VESICO-VAGINAL FISTUL

M. Vidal has proposed, in unmanageable cases of this most distressing accident, to obliterate the orifice of the vagina entirely, so as to convert this canal into a blind passage, and thereby to prevent the issue of the urine from it. This idea was suggested to him by the accidental effects produced by the nitrate of silver having been applied rather too freely to the anterior and posterior walls of the vagina, in a case where the use of a suture to the fistula had failed, and the application of the caustic had been tried instead: the opposite walls of the vagina joined together, and quite prevented the escape of any fluid from its orifice. The result was, that the urine flowed from the urethra. This state of things continued for nearly a fortnight. Unfortunately, upon endeavouring to ascertain, by means of a manual examination, the state of the parts, the feeble adhesion of the vagina gave way, and the urine again began to escape from its orifice.

In this, and indeed in almost every case of vesico-vaginal fistula, a great obstacle to the cicatrization of its edges is the fact that the bladder has usually become so contracted upon itself, that it is unable to hold any considerable quantity of urine. The fluid is therefore continually escaping from the ulcerated opening; and, when the discharge is obstructed by suture, the patient is distressed with most frequent calls to micturition. The effects thus induced very materially interfere, as a matter of course, with the process of healing: and unfortunately too, the leaving of a catheter in the bladder does not answer well, in consequence of the contracted state of the cavity of this organ.

M. Vidal has once carried his proposal into effect, in the case of a woman, 35 years of age in whom the vesical fistula was so large as to admit the introduction of several fingers through the ulcerated opening, into the bladder. After paring the edges of the vulvar orifice of the vagina, he passed three stitches through the internal labia, and tied them over two pieces of bougie, in the usual manner of forming a quilled suture. Next day, the urine was voided by the urethra; and, for nearly a month, not a drop made its escape

from the vagina. The catamenia, [also, during this period, passed along with the urine from the urethra. Most unfortunately, a difficulty in passing the water having come on, one of his pupils made an attempt to introduce a catheter into this canal, and pressed too strongly against the vaginal cicatrix. The result was, that the adhesion gave way; some blood was discharged at first, and subsequently urine came away by the wound.

M. Vidal closes his remarks in these words:—"The difficulty of closing the orifice of the vagina is indeed real; but to say that it is impossible, is nothing but a vague assertion. The objection that I deprive the women of 'son plus bel attribut,' that I rob her of her sex, and prevent her from ever conceiving afterwards, is one that it is quite needless to reply to."—*Med. Chir. Rev.*

ANALYSIS OF MILK TAKEN FROM A HE-GOAT.

In Liebig's Annalen for September, there is a paper by J. Schlossberger, M.D., detailing some experiments made with a view to determine whether a fluid secreted by the mamma of a he-goat, was true milk. The secretion or milk by male animals has been asserted by many observers. Humboldt relates the case of an Indian, who, upon his wife falling ill, gave her infant suck for five months, his breasts secreting a dense, sweet milk. Last summer, a he-goat was found in the vicinity of Giessen, which had a copious secretion of milk, the animal sucking itself. The animal was four years old, with genital organs perfect in size and development, and proved to be in every respect normal, he having impregnated many females in the previous autumn. As the secretion said to be milk, found in male animals, had never been submitted to a chemical and microscopic examination, doubts were entertained of the fact, and to set this matter at rest, the present investigation was instituted.

The fluid obtained by repeatedly milking the animal had the colour, consistence, and taste of milk, and was perfectly devoid of any unpleasant odour. Under the microscope the butter globules appeared numerous, and a considerable amount of cream separated after standing some time.

On incineration, this milk left 0.782 per cent. of white ashes. Of 100 parts of these ashes, 41.6 parts were insoluble, and 5.84 parts soluble in water.

100 parts of the milk, analyzed according to the method of Haidlen, gave—

85.09 water,
14.91 solid matter (containing 0.782 fixed salts).

100 parts of the solid constituents consisted of—

17.83 butter,
17.45 sugar of milk, and salts soluble in alcohol,

64.71 caseine and salts insoluble in alcohol. Consequently, in 100 parts of this he-goat's milk there were—

85.09 water,
9.66 casein (with salts),
2.60 sugar of milk (with salts),
2.66 butter.

Thus it was remarkably rich in casein, but contained less butter and sugar of milk than cow's milk. It was more like the milk of the female of the same species; but the method adopted for analyzing goat's milk, with which this may be compared, was imperfect, the analysis having been made some time since.

Goat's milk contains in 100 parts,* according to—

| | Boyssoau. | Luisius. | John. |
|----------------|-----------|----------|-------|
| Casein, | 5.29 | 9.12 | 10.54 |
| Butter, | 2.99 | 4.56 | 1.17 |
| Sugar of milk, | 2.07 | 4.37 | 2.34 |
| Water, | 89.28 | 81.93 | 84.93 |

The secretion of true milk by a male animal is interesting, from its bearing upon the theory of secretion. It seems to show that the secretion of milk is independent of any peculiar condition of the blood of an animal, incident to pregnancy, but that it depends far more upon the development of the secretory organ. The elements of milk are present in the blood of both male and female; their transmutation into milk depends upon the state of the glands; or, it may be asked, can the quality of the blood of the male, under any circumstances, become changed in the same manner as in parturient females?

It will be interesting to observe whether, in the rutting season, which is approaching, the secretion of milk will cease with the recurrence of excitement in the genital organs.—*Liebig's Annalen*, September.

ADULTERATION OF SULPHATE OF QUININE AND A METHOD OF DETECTING IT.

The sulphate of quinine of commerce is very frequently adulterated with *salicine*. If the proportion of the latter alkaloid present be half, or even one-fourth, the fraud may be detected by the addition of concentrated sulphuric acid, which produces, with *salicine*, a characteristic red colour. But if no more than a tenth of *salicine* is mixed with the sulphate of quinine, this red colour is not developed by the addition of sulphuric acid. In order to detect the presence of *salicine* in this or less proportions,

this alkaloid must be isolated. For this purpose, take three or four grains of the suspected sulphate of quinine, and pour on it about six times its weight of concentrated sulphuric acid, which dissolves the salt, and if *salicine* be present, forms a solution of a brown colour, just like sulphuric acid soiled by some vegetable matter. To this add carefully and gradually some distilled water, until a white precipitate appears. This will probably be *salicine*, which will not dissolve in a moderately dilute acid solution of sulphate of quinine. Filter the liquid, and collect the precipitate on a watch glass, and it will now produce, upon the addition of concentrated sulphuric acid the bright red colour characteristic of *salicine*. If too much water be added, the precipitate will dissolve, and only a loose gelatinous precipitate will form, very difficult to separate.—*M. Pelletier, Journal de Chimie Medicale*.

GALVANISM APPLIED TO THE TREATMENT OF UTERINE HEMORRHAGE, ETC.

Dr. Radford says that he has pursued this practice with great success, in cases of hemorrhage, accidental or unavoidable, accompanied by exhaustion, and occurring before, during, or after labour. He adds—

"I am satisfied, from positive trial of the remedy, that it will be found a most important agent in tedious labour, depending upon want of power in the uterus, and where no mechanical, obstacle exists. I would, also suggest the probability of its proving valuable in originating uterine action *de novo*, in cases where it may be considered necessary to induce premature labour. It seems to me also to be worthy of trial in certain cases of menorrhagia in the ungravid state, where, on vaginal examination, the uterus is found to be atonic, as evidenced by its large flaccid condition, and the patulous state of the os uteri."

The remedy is thus applied:—

"The brass ball of the vaginal conductor is to be passed up to the os uteri, and moved about, at intervals, on to various parts of this organ; and at the same time, the other conductor must be applied to the abdominal parietes over the fundus uteri. Shocks may be also passed transversely through the uterus, by simultaneously applying the conductor on each side of the belly.

"The application should be used at intervals, so as to approximate in its effects as nearly as possible, to the natural pains.

* Burdach's Physiologie, bd. iii. s. 146.

It may be continued until it meets the exigencies of the case."—*Lancet*.

VENOUS PULSE.

M. MARTIN SOLON read a paper on the Nature and Causes of the Venous Pulse, which occasioned several animated and interesting discussions. The term venous pulse is generally applied to the pulsations which are observed in the jugular and subclavian veins, in cases of great repletion of the cavities of the heart, or of insufficiency of the tricuspid valves. The latter not closing when the ventricles contract, the blood is expelled, as it were, into a third artery, and venous pulsations ensue, more or less synchronous with the arterial pulsations. M. Martin Solon, having lately observed pulsations in the dorsal veins of the hands in two instances, in which it appeared to him that the pulsations were evidently transmitted through the capillaries, wished to draw the attention of the Academy to this phenomenon. The patients on whom he observed the venous pulsations were both attacked with violent pleuro-pneumonia, had been bled several times, and had taken tartar-emetic in large doses. The veins were prominent, rounded, of a bluish-rose colour, and presented a diastolic and systolic motion, easily appreciable by the eye, and synchronous with the pulse. On a careful examination being made, it was evident that this motion was not communicated by any adjacent vessels. When the fingers were pressed, the pulsations ceased, but when the wrists were pressed, they remained as before. When the brachial artery was pressed, the pulsations of the radial and cubital arteries, and of the dorsal veins of the hands, all disappeared together. In both cases the patients gradually recovered. In one, the venous pulsation appeared on the fifteenth day, and remained seven days, the cardiac impulsion being strong; in the other, the impulsion of the heart was weak, and the symptom was not of so long a duration. M. Martin Solon thought that the abnormal fluidity of the blood in these patients facilitated the passage of the blood through the capillaries, and thus enabled it to retain the impulsion communicated by the heart. The same phenomenon, he stated, had been observed by Dr. Ward, on a woman recently delivered, and attacked with pneumonia, and by Dr. Graves, on a woman labouring under peritonitis. In both instances the patients had been bled largely. This symptom was

of great importance in a pathological point of view, as it indicated a state of fluidity of the blood which might render further bleeding inadvisable; he consequently thought that the attention of practitioners should be directed to its existence. In a physiological point of view, the fact of the arterial systole and diastole being thus communicated to the veins, was of great importance, as it proved that the entire circulation is under the influence of the heart.

M. CRUVEILHIER stated, that he had several times observed venous pulsation in the veins of the bend of the arm, but never in the dorsal veins of the hand. He thought it most probable that such pulsations were the result of a shock conveyed to the venous column by the neighbouring arteries.

M. VELPEAU had seen venous pulsation in all the superficial veins of the thoracic limbs, but attributed it to a kind of reflux, such as is frequently observed in the jugular veins.

M. BLANDIN admitted fully the explanation of M. Martin Solon. Harvey had stated that, in some cases, the heart was able to transmit pulsations to the veins, and the experiments of M. Magendie, which he himself had successfully repeated, showed that this was really the case. If, on the dead subject, a part of the circulatory system having been previously cleared by an injection, fluid is injected into an arterial trunk by successive jerks, it passes out in a jerk from an opening made in a corresponding vein. If an interrupted flow of blood from a vein can be produced in a dead subject through the capillaries, why should not the same phenomenon be possible in the living?

M. DUBOIS D'AMIENS remarked, that when the circulation is examined with the microscope, it proceeds by jerks, until the blood reaches the capillaries, when its flow becomes uniform; it was, therefore, scarcely possible to admit the interpretation which M. Martin Solon had given.

M. MARTIN SOLON replied, that he did not reason from experiments, but from pathological facts. He had been careful not to be misled by the proximity of arterial branches, and by the communication of their shocks to the veins. If the pulsations had depended on reflux from above, pressure above the veins ought to have arrested them, which it did not. The valves of the veins would prevent the jugular reflux from propagating itself far.

M. POISEVILLE stated, that researches which he had recently made with reference to this subject, would enable him to throw some light on the question. When the capillary circulation of reptiles and mammiferous animals is examined with the microscope, its flow appears perfectly uniform; but this is not really the case; for although continuous, it is insensibly interrupted, jerked (*saccadé*), as is proved by the following experiment.—If a curved tube containing a solution of subcarbonate of

to prevent the coagulation of the blood, is adapted to one of the veins of a thoracic or pelvic limb, so as for the opening to be turned towards its extremity, the blood enters the tube continuously, but not uniformly. The flow is *interrupted-continuous, continu-saccadé*, which would not be the case if the flow of blood in the capillaries was uniform. This experiment is the same on the living as the one described by M. Blandin on the dead subject, and the result is also the same. Careful examination of the jet of blood in ordinary venesection, equally demonstrates the truth of this fact. The amplitude of the jet is never identically the same, even when the openings of the skin and of the vein remain perfectly parallel, and the arm and its muscles are perfectly inactive. That this is the case may be perceived by observing attentively the spot where the blood falls; it will be seen to recede or approximate alternately. It is scarcely necessary to add that the greatest amplitude of the jet coincides with a contraction of the heart, or with an expiration, which increases the impulsive force of the arterial flow, and that the smallest amplitude coincides with the diastole of the heart, or an inspiration. If this normal state is exaggerated, it may give rise to the venous pulse, or uneven flow, which is sometimes observed in bleeding, and which is usually attributed to the communication of arterial shocks. In the mesenteric circulation of young rats and mice, no intermittence is at first visible; but if blood is lost in any quantity, the circulation becomes jerked (*saccadé*) both in the capillaries and the veins. The heart losing its energy, a smaller quantity of blood is thrown into the arteries, which being less dilated, contract with less force, and thus lose their power of converting the intermittent flow into a continued one, as is normally the case. This accounted for the venous pulse having been observed by M. Martin Solon, Dr. Graves, and Dr. Ward, our patients who had lost much blood. M. Martin Solon attributed the phenomenon to the greater fluidity of the blood. But his own experiments, as well as those of M. Magendie, proved that the more aqueous the blood became, the greater was the difficulty with which it passed through the capillaries, owing to imbibition. He thought it, therefore, more correct to explain the influence which loss of blood evidently had in producing venous pulsation, as he had done.

M. Piorry had seen jerks occur in bleeding patients who presented obstructions in the right heart, when a pound or a pound and a half of blood had been withdrawn. At the same time, the blood became red instead of black, showing that the action of the heart had become, momentarily, stronger.—*Ibid.*

SINGULAR CASE OF FATAL INTRA-UTERINE HEMORRHAGE.

Mr. Thompson records, in the *Medical Gazette*, the case of a female who, having

previously borne twelve children, had arrived at the close of the ninth month of pregnancy. As well as usual during the day, she passed a disturbed night. A midwife, sent for on the following morning, found labour commenced and the presentation natural. The patient gradually became exhausted, and died undelivered, in a few hours. Examination after death, the uterus was found to be

"Very large, and apparently filling the whole cavity of the abdomen, pressing the floating viscera strongly upwards and backwards; these latter had a very bleached appearance, and all their vessels were empty. On raising the fundus of the uterus, an immense quantity of bloody fluid rushed from the vagina; and on cutting into the womb (the walls of which were very thin), we found that it still contained more than two quarts of fluid and grumous blood, mixed with large coagula, which completely surrounded the child, enveloped in its membranes entire, with the head in the brim of the pelvis.

"The placenta was wholly detached from the uterus, but the place where it had been attached was evident enough, on the right side of the womb, below the fundus: we examined this part very narrowly, but could discover nothing unusual in its appearance, or in that of the placenta."—*Ibid.*

THE TREATMENT OF TYPHOUS FEVER AND ITS COMPLICATIONS.

This subject is discussed at considerable length in the last number of the *Edinburgh Monthly Journal*, by Dr. Davidson. Plain and practical, without pretensions to novelty, the communication is deserving of attention. The author thus expresses his opinions:—

"1. That typhus is a disease which cannot be checked in *limine*, is often tedious in its progress, causing great emaciation and exhaustion; we ought not, therefore, without very strong special reasons, to employ any measures which may vitally lessen the powers of life, such as bleeding, vomiting, and excessive sweating or purging.

"2. The ordinary measures may be the following:—Place the patient in a large, well-ventilated apartment, on a mattress with few bed-clothes; let the head be shaved, and kept cool with an evaporating lotion; give a gentle purgative every second or third day; let the skin be bathed once or twice a day with tepid water, and this may be accompanied with small doses of tartrate of antimony, antimonial powder, or ipecacuan. His drink should be light, cooling, and slightly diuretic, and his diet nutritive, but light, and little liable to acrescency. When there is a tendency to congestion in any organ, a little calomel or hydrargyrus c. creta may be

combined with the purgative; or calomel, with a small portion of opium, may be given every six or eight hours. The application of two or three leeches to the temples or nostrils is often useful in congestion of the brain, and also when there is intense headache, which is often the forerunner of delirium. Blisters are also often advantageous in such cases. Derangements of particular functions, or symptoms arising from idiosyncrasy of constitution, sometimes occur, and must be treated accordingly.

"3. Mercury, in small doses, is frequently useful in promoting several of the secretions, and in relieving the congestions of internal organs.

"4. Opium is injurious in a large proportion of cases, from its tendency to cause congestion in the head; but when diarrhoea is a symptom, it ought to be administered with a view to check the exhausting evacuation.

"5. Wines and other alcoholic liquors, as they contain both stimulant and alimentary elements, are the most to be relied on for supporting the strength, and are the least injurious. The pulse, taken along with the general symptoms of exhaustion, ought to be the rule for its [their] exhibition, both as to time and quantity.

"6. Ammonia, camphor, quinine, and other similar tonics, are not to be depended on in bad cases, and when exhibited along with wine, frequently cause the patient to refuse both.

"7. When the disease is complicated with local affections in the head, chest, or abdomen, these must be treated on the same general principles as the idiopathic disease, which they represent; with this important modification, that evacuations of all kinds must be employed more sparingly, and with much caution; and that even in these cases, if there be much prostration of strength and a very weak pulse, wine must be administered, although more moderately than in the simple disease."—*Ibid*

TANNIN A CURE FOR TOOTHACHE.

Mr. Druitt, in recommending the use of tannin as a remedy in cases of sore nipple, of salivation by mercury, of aphthæ, &c., says—

"But of all the cases for which it is adapted, that common troublesome complaint toothache, is that in which I believe it is most to be depended on. When the tooth aches, let the patient wash out the mouth thoroughly with the solution of carbonate of soda in warm water; let the gum around the tooth, or between it and its neighbours, be scarified with a *fine* lancet; then let a little bit of cotton wool, imbued with a solution of a scruple of tannin, and five grains of mastich, in two drachms of æther, be put into the cavity, and if the ache is to be cured at all, this plan will put an end to it in nine cases out of ten."—*Ibid*.

CASE OF MALIGNANT OR HEMORRHAGIC SMALL-POX.

By JOHN SNOW, M.D., London.*

The following case from my note book, of a form of small-pox which, I believe is happily now very rare, is, I think, not devoid of interest; and will be still less so, if examined in conjunction with the "case of Purpura Hæmorrhagica, probably arising from variolous contagion, by N. Adams, Esq., in the last number of the Medical Gazette, which occurred in the country nearly at the same time as my case, and which resembles it in several particulars.

I was called at 7 o'clock, on the morning of Saturday the 8th of June last, to a boy named Cannell, living at No. 2, Chapel Place, Crown street, Soho. He was a fine stout boy, seven years of age, but had been affected with asthma from his birth. His brother, aged 5, was labouring under small-pox in the same room; they were of the distinct kind, and in the maturative stage. Neither of the children had been vaccinated. The subject of this case took ill on the Thursday morning previous to my seeing him, with pain in the back, and fever. On the evening before my visit, an eruption appeared on the skin, and he became delirious; afterwards he had bleeding from the nose. He was delirious all the night, and was insensible of what was said to him, and vomited a liquid mixed with blood. I found him in a muttering delirium, incapable of being roused, although he resisted any attempt to give him drink. He was vomiting almost constantly small quantities of blood, and of a thinner liquid, apparently serum, tinged with blood. The face and neck were swollen, and of a purple colour—were occupied, in fact, with one large vibex. There were other vibices on the body, and the rest of the trunk and extremities was spotted with numerous petechiæ, many of which had a lightish coloured spot in the centre, and appeared like pimples till they were touched, but there were only a very few on the trunk which could be felt to be a little elevated. The skin was hot, and the pulse frequent, small, and feeble; the tongue was coated with a brown fur, and the rest of the interior of the mouth was of a bluish-white colour; he had passed motions in bed; cold applications were directed to the scalp denuded of hair, and sinapisms to the legs.

He was visited again in three hours; the vomiting of blood continued; the

* Med. Gaz.

breathing was stertorous, and the pulse almost imperceptible. He died in half an hour more.

I made an examination of the body eleven hours after death, with the assistance of my friend Mr. Marshall, of Greek street. The vibices and petechiæ remained as before; the scalp was very vascular, and blood flowed from it when cut; the veins on the surface of the brain were much distended, and the pia mater dipping in between the convolutions was much engorged, and there were little spots of extravasated blood in this situation. The red dots were found to be rather more numerous and large than natural on slicing the brain; there were one or two drachms of clear serum in each lateral ventricle, a little in each of the other ventricles, and a drachm or two at the base of the brain; the lungs were extensively emphysematous, they did not collapse on the chest being opened, but on the contrary, rather bulged out, and many of the lobules were paler and more prominent than the rest. This emphysema of the air cells was most extensive at the lower part of the lungs; there were a few partial adhesions of the pleuræ, and the lungs were engorged with blood, as were the right cavities of the heart, which was healthy. The stomach contained a little bloody liquid, and all over its inner surface were dark purple spots averaging about the size of a pea, and situated about half an inch apart. They proved to be small portions of blood extravasated beneath the mucous membrane; this condition did not extend to the intestines. The feces in the small intestines were of a very dark colour, most likely from the presence of blood. The bladder was empty, and the viscera not mentioned were in the normal condition.

The row of small dwellings, in one of which this boy lived, are damp and ill ventilated, and all the illness I have seen in them has been more severe and intractable than in the rest of the neighbourhood. I have treated two cases of sporadic cholera there, as bad as any cases of the epidemic disease which I have known to end in recovery; and one case of purpura hæmorrhagica with inflammatory symptoms in a child about five years of age, which I understand did not recover from the illness.

CASE OF PURPURA HÆMORRHAGICA.

PROBABLY ARISING FROM VARIOUS
CONTAGION.*

By N. ADAMS, Esq., Barchory.

J. S., a farmer, residing in a healthy dis-

trict of the country, of a sound constitution and sober habits, about 25 years old, was engaged with his servants in cutting hay on the 3d of July, although he did not feel altogether well. Next day he was seized with nausea, general uneasiness, and other feelings, which he fancied might be the preliminary symptoms of an attack of small-pox, as he had been visited about three weeks previous by a sister, who had just recovered from the disease in its modified form. He was confirmed in this opinion next day by remarking some purple spots on his limbs; he took some opening medicine, and confined himself to bed in a well ventilated room.

I saw him for the first time on the 6th, at which time his face was puffy, especially his lips; his eyes deeply ecchymosed; the whole body rather swollen, but not so as to pit upon pressure; purple spots on his limbs, and large vibices on the neck, especially behind, all the lower part of the abdomen being covered with the same. His pulse was from 100 to 105, soft, full, and undulating; his tongue swollen, and a white rim running along his gums close to the teeth. The urine was of a dark yellow colour, but did not stain a piece of linen dipped in it. I bled him to the amount of ten ounces: the blood was sily, but its coagulum loose. A solution of carbonate of potass with lemon juice to be administered frequently, and *vj. gr. of calomel, with viij. gr. of Hydrargyrum c. Creta*, to be given next morning.

On the 7th, the purple blotches much extended, the lower part of the abdomen in particular being altogether of a dark purple colour, and the back thickly marbled with vibices and purple spots: stigmata on the arms and legs, but less marked than on the trunk: there had been considerable oozing of blood from the gums, and from the orifice made in the arm; the ecchymosis on his eye enlarged, and of a darker colour; impulse of the heart preternaturally great; throbbing of the arteries in the epigastrium and neck; no delirium; the urine darkish and turbid, deposited little sediment, but upon the application of heat some small coagula floated in the water; it still did not stain a piece of linen cloth; pulse 120, soft and feeble. The opening medicines having produced little effect, *vj. grs. more of calomel, and ½ oz. castor oil*, were directed to be given. A draught composed of lemon-peel and cream of tartar, to be administered *ad libitum*.

On the 8th, at noon, debility greatly increased; pulse 120, soft and feeble; the discharges from the bowels consisting principally of blood;

the urine also reported to be bloody; slight oozing of blood from the gums and arm; the greater part of the back, and the whole of the abdomen, of a dark red or livid colour; numerous stigmata and vibices on the other parts of the body: much jactitation and painful singultus, for which an opium pill, and a mixture with creasote, were ordered. Sago, seasoned with brandy, to be offered to him occasionally, and a strong solution of quinine to be had in readiness, to be given if the hiccup should settle. The gums to be washed with a solution of alum.

At 8 p. m., the weakness, and all the other bad symptoms, greatly aggravated; singultus had at first stopped, but had returned of late; pulsæ at the arm scarce perceptible; alvine discharges like tar, those from bladder of pure blood; the extremities losing their heat; great sinking, and muttering delirium, when left to himself; the colour of the body inclining to a dark green in many places; no appearances of vesicles, pustules, or papulæ: the eruption nowhere elevated above the surface; the eyelids, as well as the eyes themselves, were ecchymosed, and there were a few stigmata on the forehead, but no discoloration of the rest of the face. Brandy to be given *ad libitum*.

He died at 11 o'clock, p. m., that is to say, about five days after the commencement of the attack.

The disease described above is so uncommon in this part of the country, that although I have now been in pretty extensive practice in it for more than twenty-five years, I have never seen nor heard of any case exactly similar. I have met, indeed, with cases of *purpura hæmorrhagica*, but with none possessing the aggravated form of the present case, nor under circumstances rendering it so difficult to account for its spontaneous development in the system. In the absence, then, of any other cause to account for its generation in the present instance, I am inclined to believe it to have been connected with the contagion of small-pox, to which, as stated above, the patient had been exposed some weeks previous to the attack. What confirms me very much in this supposition is the similarity of the symptoms to those of a certain anomalous type of small-pox described by some of the older writers on that disease. For example, the following history of small-pox, related by Morton, bears a very striking resemblance to the case given above.

"*Historia* 39.—Martha Meade, ancilla, duodeviginti annos nata, die 24 Januarii, 1691, repente cephalgia et lumbagine immani corripiebatur.***Dic morbi tertio, mensis nimirum 27. Pharmacopola accersitus, post bolum nescio quem præcedenti nocte exhibitum, nulla efflorescentia in cute se prodente, audacter a vena cubiti xxiv. vel xvi. sanguinis eduxit, qui

cum impetu exsilliebat, atque nullatenus rheumatici sanguinis ad instar, concrecebat, fibris peuitus privatus. Die morbi quarto mane ego accersitus animadverti universam cutem efflorescentia continua et plana intense rubra, non scarlatina verum levi et plano erysipelate perfusam, maculis rubris minoribus, et nigris majoribus ubique per totum pectus sparsis. Urinam insuper ægra reddidit copiose et frequenter atque sinceri sanguinis ad instar intense rubrum Dormiebat quidem quadantenus, verum oppressa et languida, atque pulsu tremulo et inordinato laborans, sese plurimum et pæne per petua jactabat. Sub finem quinti diei morbi sanguine confertim a bronchiis exiliente suffocata perit labiis et manibus (uti in consensibus variolis plerumque contingit), quadantenus ab inani naturæ nisu tumefactis. Cadavere inspecto cutem deprehendi (visu horrendum!) ubique planè nigricantem, proximo autem die colore caruleo inbutam, qualem colorem etiam omnia linta sanguine conspurcata. Aquæ saponacæ primùm immersa planè exhibebant, ac si fuissent arte tincta, quæ labeis haud facile delabatur. Tantum valet hocce venenum, uti ad ægrum pervenit in humanum ipsorum crasi immutandi."—*Hist. Variol. Var.* xi. 39.

In another place the author observes;—"Malignæ enim hæmorrhagiæ a soluta sanguinis crasi et colantium glandularum eo spirituum languorum laxitate per *diæmænon* ex intestinis, renibus, naribus, nonnunquam ex oculis, auribus, dentium, alveolis, 'qua pora datur' equè ac è vasis uterinis instar loturæ carniū ubique perfluissimè scaturiunt, earumque prænunciæ sunt petechiæ frequentissimæ. Maculæ purpureæ et nigræ quales peste correptis paulo ante obitum accidunt, quæ pari passu cum hæmorrhagiis cum quibus conjunguntur, numero et magnitudine, unaquaque pœnè hora augentur vel diminuantur."—*Ib.* viii.

Sydenham briefly mentions the complication of purpura with small-pox in the following passage:—"We must confess that a bloody urine and purple spots which are the most certain forerunners of death, sometimes happen, when there is scarce any sign appearing of the small-pox, or but very few pustules coming out; and as these generally accompanied the pox that fluxed most, so now and then they invaded so very early, that they killed the patient before eruption."—*Works, translated by Pechy*, page 408; see *Greenhill's edit.* page 333.

The same symptoms, namely, purple spots and discharges of blood, are also mentioned at page 128 of the later edition. Heberden gives the following account of this complication of small-pox:—"That very formidable symptom, bloody urine, has come on about the fifth day from the first sickness; the eruption in the meantime has hardly arisen above the skin, chiefly showing itself in purple spots and blotches, and resembling variolous pimples only on very few places. The stools are likewise bloody; the very tears have been like lotura carniū; and if a small scratch has any where been made in the skin, the blood

for many hours continued to come out, and has hardly been stopped. This hopeless state has been terminated by death in three or four days after the eruption; nor have I known one exception."—*Comment*. 2d edit. p. 440.

This is not the place for entering at length upon the ancient history of this variety of small-pox; but I may briefly mention, that the green and black varieties of small-pox, characterized by dark-green or purple spots, and bloody urine, are described by Rhases (*Cont.* 420, 2 and 4), and by Avicenna (ii. 1, 3, 6). These descriptions of this malignant variety of small-pox agree so well with the symptoms of the case which I have related, that it is impossible not to entertain a strong suspicion, at least, considering the circumstances under which it occurred, that the latter must have originated in variolous contagion; and if so, it is a proof (as both the subject of it and his sister, from whom he must have contracted the disease, had been vaccinated in infancy), that small-pox after vaccination will sometimes assume its most malignant forms. It is deserving of remark, that no more cases of small-pox occurred in the family, or in the neighbourhood. I took care, however, to have every person re-vaccinated who had come in contact with the patient during his illness, and to have the bedroom and adjoining apartments properly fumigated.

[We have met with, in the instance of carlatina, the bloody urine alluded to by our correspondent, Mr. Adams, the learned translator of the seven books of Paulus Egineta. — *Ed. Med. Gaz.*]

BULLETIN.

Philadelphia, April, 1845.

Medical Classes and Graduates.

From medical journals, catalogues and newspaper notices, we glean the following statistics of some of the Medical Schools in the United States, during the winter session (1845) and spring commencements or conferring degrees in medicine.

| | Class. | New Graduates. |
|----------------------------|--------|----------------|
| University of Pennsylvania | 446 | |
| Jefferson Medical College | 409 | 116 |
| Pennsylvania College | 60 | 14 |
| New York University | 378 | 125 |
| Pennsylvania University | 156 | |

| | Class. | New Graduates. |
|---|--------|----------------|
| Medical Institute of Louisville | 286 | 74 |
| University of Maryland | 103 | |
| Willoughby Medical College | 126 | |
| Cleveland Medical College | 109 | |
| Harvard University | 157 | |
| Berkshire Medical Institution | 145 | |
| Castleton Medical College | | 21 |
| Albany Medical College | 111 | |
| Geneva Medical College | | 41 |
| Laporte University, Indiana | 44 | |
| College of Physicians and Surgeons, N. Y. | 190 | |
| Louisiana Medical College | 93 | |
| St. Louis University | | 14 |
| Kemper College (St. Louis) | | 16 |
| Yale College | 11 | |

The number of the several classes as above is 2813, and if we assume an average proportion of students to the graduates of those schools in which the latter alone are recorded in our list, the number will be upwards of 3000. If again we assume 500 to be the probable amount of those in attendance during the past winter at the schools in Cincinnati, Richmond and Charlottesville (University), Charleston, S. C., Augusta, Ga., Chicago, and others scattering, not now remembered and certainly not heard from, we shall have a sum total of 3500 students of medicine attending lectures during the past winter in the different schools in the United States. What is the ratio of those who staid at home during the above period? Is not their number equal to that recorded above? A pretty large nursery this truly, from which Esculapians for the United States are sent out, to say nothing of importations, estimated at about 120 annually.

Of the 446, in the catalogue of the Medical Class of the University of Pennsylvania (1844-5), 42 are, we observe, graduates, mostly of the University. The number of graduates attending lectures in the class 409 of the Jefferson College, is 57. Pennsylvania contributed 125, Virginia 88, and North Carolina 52 students to the University class, while the proportion from these States

severally was 178, 56 and 18 to the Jefferson College. Philadelphia alone sent 51 students to the University. A designation in this particular is not made in the catalogue of the other school.

Appropriate Places for Interments.

Some months ago we took occasion to notice in the "Bulletin," *A Report on the Practice of Interments in Towns*, by Edwin Chadwick, Esq., being supplementary to a Report on the Sanitary condition of the Labouring Population of Great Britain. Our attention is again called to the subject, by the republication, or rather reprint, in this city, of some of the chapters of the supplementary report, with a view of showing the preference that ought to be given to rural cemeteries over vaults in churches and common grave-yards in cities and towns.

Whether regard be had to public health, or to the preservation of solemn and religious associations, or to the indulgence of the proper sensibilities of friends of the deceased, there cannot be a question as to the propriety, and, it may be added, duty, of substituting, as speedily as possible, sub-urban and rural cemeteries for the charnel-houses and pits in which body is laid upon body, according to the too prevalent custom in large cities, and more particularly in the old and crowded parts of them. Even in comparatively favourable situations, in common grave-yards, the spade or pick of the sexton may be heard striking on the coffin, which holds the remains of some near and dear friend: perchance of one who was once in the closest relation to him or her who is about to be deposited in the freshly-opened grave. Death is not intended, in any moral or religious aspect, to excite disgust nor to be associated with all that is distasteful or abhorrent to our nature; and yet who can enter the vault beneath a church, or walk through a grave-yard, if it were possible, without stumbling at every step, and not have his mind diverted from the pure and sublime thoughts which ought to be suggested for

his contemplation, to the notice of all that is physically distasteful, and by association productive of gloomy and depressing emotions.

How different the impressions produced by visits to a rural cemetery, in which, while our memory reproduces the scene of death and the monumental tablet, pillar, or other votive erected by friendship, speaks the character of the spot, we are allowed in the many shaded walks and in the quietness of the entire scene, to indulge in profitable meditation; and yet not with eye always earthward, but at times, while looking at the vaulted sky above, and the shrub and the flower near and around us, we are reminded of the beneficence of Deity, and find fit emblems of hope and renovation after decay. The mind thus softened is in a fitting frame to listen to the word in season, to recur to the Book for consolation and guidance, and to offer up its homage in a saddened, it is true, but also, in a hopeful and trusting spirit.

Mr. Chadwick has collected a large body of evidence from medical men, undertakers, and those resident near church-yards, tending to show the fact of emanations from buried dead bodies, and the morbid effects which they produce on the living, even at some distance from the spot. In reply to the opinion that all danger from interments in towns, could be obviated, if no burials were allowed except at a depth of five feet, Mr. Chadwick adduces the experience of Dr. Reed, who detected the escape of deleterious miasma from graves more than twenty feet deep. He states, "In some church-yards, I have noticed the ground to be absolutely saturated with carbonic acid gas, so that whenever a deep grave was dug, it was filled in some hours afterwards with such an amount of carbonic acid gas, that the workmen could not descend without danger. Deaths have, indeed, occurred in some church-yards from this cause."

Mr. Chadwick gives the conclusions of Dr. Riecke's report "On the

fluence of Putrefactive Emanations on the Health of Man," as follows :

"The injurious effect of the exhalations from the decomposition in question upon the health and life of man is proved by a sufficient number of trustworthy facts ;

"That this injurious influence is by no means constant, and depends on varying and not yet sufficiently explained circumstances ;

"That this injurious influence is manifest in proportion to the degree of concentration of putrid emanations, especially in confined spaces ; and in such cases of concentration the injurious influence is manifest in the production of asphyxia and the sudden and entire extinction of life ;

"That in a state less concentrated putrid emanations produce various effects on the nerves of less importance, as fainting, nausea, headache, languor ;

"These emanations, however, if their effect is often repeated, or if the emanations be long applied, produce nervous and putrid fevers ; or impart to fevers, which have arisen from other causes, a typhoid or putrid character ;

"Apparently, they furnish the principal cause of the most developed form of typhus, that is to say, the plague (*Der Bubonensepe*). Besides the products of decomposition, the contagious material may also be active in the emanations arising from dead bodies."

Exudations from church-yards into common-sewers, increase the offensiveness and danger of emanations from these latter ; and if in the neighbourhood of wells or pumps, they contaminate the water and affect its taste. In France and some parts of Germany laws have been passed prohibiting the opening of wells within three hundred, and in some cases four to five hundred feet from any place of burial.

Mr. Chadwick enlarges on the "*Moral influence of seclusion from thronged places, and of decorative improvements in national cemeteries, and arrangements requisite for the satisfactory performance of funeral rites.*" Abroad, he says, the national cemeteries have obtained the deepest hold on the affections of the population. He adds—

"I have been informed by an accomplished traveller, who has carefully observed their effects, that cemeteries have been

established near to all the large towns in the United States. To some of these cemeteries a horticultural garden is attached ; the garden walks being connected with the places of interment, which, though decorated, are kept apart. These cemeteries are places of public resort, and are there observed, as in other countries, to have a powerful effect in soothing the feelings of those who have departed friends, and in refining the feelings of all."

From present appearances these remarks will be fully sustained by facts ; if we may draw inferences from the Mount Auburn Cemetery near Boston—the extensive one near the city of New York, on Long Island ; and the Laurel Hill, Monument and Woodland Cemeteries near Philadelphia. The natural advantages of the Laurel Hill and the Woodlands, on the score of adaptedness and picturesqueness of situation, are very great, and we cannot doubt that the readiness with which the lots in the first have been purchased will be paralleled in the case of the latter.

Physiology of Digestion.

When looking over a number of the "London Lancet," in which are some notices extracted from *Comptes Rendus*, Dec. 9, 1844, of experiments and observations on Digestion, we were forcibly reminded of the Introductory Lecture of Dr. Payne, of the New York University, to his course of lectures on the Institutes of Medicine and Materia Medica, last winter, in that institution. This gentleman has, oftener than we can publicly express, our continued sympathy in his complaints against the inroads of chemistry on physiology. These are not the less injurious because made in the garb and with the forms of science. The scholastic formulæ and jargon of the school of Alexandria exerted for a while as pernicious an effect on sound literature and philosophy as the irruptions of the Goths and Vandals. During the period, and it was a tolerably long one, in which we lectured on the Institutes of Medicine in the Philadelphia Medical Institute, we felt ourselves frequently called upon to remonstrate against the intrusiveness of chemistry in its attempting to account for vital phenomena, and to explain the mysteries of function. Intent on making the application of physiq-

logy to pathology and therapeutics, and in showing its co-relation to these branches, we were kept in the track of vitalism, and regarded, perhaps with more suspicion than we would otherwise have done, the attempt to place chemistry in the fore-ground.

Analytical chemistry is that which has been exclusively brought to bear on physiology, and as it is necessarily destructive, it is, in its very essence, the antagonist of those combinations and transformations which are both the evidence and result of vitality. It will tell us the composition, as far as the separate principles are concerned, of the different fluids and solids; but it utterly fails to guide us to a knowledge of the vital or physiological value of any one of these principles, or whether it be one or two or more separate elements, or binary or ternary combinations of those that give the peculiarity of property or office to the fluid or solid. Still more signal must be the failure of any explanation, merely chemical, when the question is of an organ, a compound and complex union of different solids and fluids all tending to one common object — the discharge of function.

We may take, as Dr. Payne has done, in his introductory lecture, "the physiology of digestion," for an example of the fallacies, inconsistencies, and contradictions of chemists in their attempts to elucidate the means and the mode by which function is performed. He shows on this point Liebig *versus* Liebig. "On the same page we meet a purely chemical and a purely vital philosophy of digestion; and equally so of other important organic processes." Nor are they merely implied contradictions which Dr. Payne exposes. He shows them to be numerous and palpable in the general declaration of doctrine and principles; and, of course, they must vitiate the deductions in detail drawn from them.

The predominant fallacy arises from the scientific array by the chemist of component principles in an ascertained active functional substance, as in the gastric juice, for example, and his claiming for one or more of these a power competent to the production of the changes of food in the stomach, on the strength of said principle or principles having a partially soluble and convertible property. The logic is not very sound, it must be confessed; but it is that which has generally passed current on such occasions. In this way, the gastric juice is said to be the general solvent of the food in the stomach, and the hydrochloric acid in this juice is declared to be the specific sol-

vent. If the physiologist deny that results are obtained by such a solution, analogous to the formation of chyme, the chemist sharply rejoins — "What is the solvent, then?" Should the other timidly suggest that a vital and organized membrane and vital organized fluids must count for something in the change, he is met by the sneering objection — "Do you know what is vitality? I cannot deal with abstractions — I don't understand them — I only profess to deal with facts." Grant this last remark, friend chemist; but still your facts are wild theories when you begin to apply them out of place, and attempt to put them together in such a way as to represent varied and complex phenomena, made up of some thing more than your facts.

Chemists, misled by the arbitrary use of terms, have assumed that these express the occurrence of phenomena in the sense alone in which they understand them. Thus, in digestion, by dint of speaking of the solvent power of the gastric juice and the solution of ingesta by it in the stomach, they have come to regard this conversion as a mere chemical process. But it must by this time have occurred to some of them, that a solution physiologically considered is a different thing, since it implies, in addition to the ascertained and recognised chemical principles, an organized and vital principle, by and through which mainly the change of food into chyme, the solution so called is brought about. This, it will be objected by the chemist, is asking the question; it is going beyond the proof: — it is running into vitalism and abstractions. But who shall restrain us from these tendencies? Certainly not chemistry, for it has failed in its explanations. It has not discovered the cause: it leaves us, if it does not compel us to invoke vitalism, and to prosecute our researches in another channel and by other modes. This channel is physiology — these modes the modifications which the various substances brought into contact with vital and organized parts undergo in consequence of said contact. The results of this study are as certain and as demonstrable as chemical ones; they are infinitely more profitable for useful purposes in hygiene, in physiology, in pathology, and therapeutics.

The tendency of inquiries into the process of digestion is just now in more quarters than one anti-chemical; as we find in the notices to which we referred at the beginning of our present remarks. M. Blondlot, who has recently published a

treatise on digestion in Paris, detailing very numerous experiments made upon a dog in which a fistulous opening into the stomach was maintained for upwards of two years, believes that the digestive property of the gastric juice depends, *not on its obvious chemical constitution, but upon a peculiar organic principle*. Since the work of M. Blondlot was published, two other French chemists have made an elaborate experimental investigation into the properties of the gastric juice. They start with the assumption that this fluid owes its digestive properties to the union of two principles: 1st, an acid; and 2d, *a peculiar organic matter destructible by heat*.

If, as Dr. Payne affirms in the closing paragraph of his lecture, that it is in the function of digestion "that the physiologist must raise his principal defence against the invasions of chemistry," we may rest easy as to the result, which, from all present appearances, will be on the side of vitalism.

BIBLIOGRAPHY.

Sanitary Condition of the Labouring Population of New York.*

Some time ago we called the attention of our readers to the deplorable condition of the working people and their families, both in towns and in rural districts in Great Britain. The Discourse, now before us, by Dr. John H. Griscom, shows that evils of this nature are becoming alarmingly great in New York; and, we may add, on stronger evidence than mere analogy, that they are not at all infrequent in Philadelphia.

Dr. Griscom's official station had both incited and enabled him, in former years, to make investigations into the condition of the poorer classes of the population of New York, and the causes of their diseases and mortality:

"The objects of this communication, briefly stated, are these;—1st, to show that there is an immense amount of sickness, physical disability, and premature mortality among the

* The Sanitary Condition of the Labouring Population of New York. With suggestions for its improvement. A Discourse (with additions) delivered on the 30th December, 1844, at the Repository of the American Institute. By John H. Griscom, M.D., Fellow of the College of Physicians and Surgeons; Physician of the New York Hospital; late Physician of the City and Eastern Dispensaries. New York: Harper & Brothers. 1845.

poorer classes; 2d, that these are, to a large extent, unnecessary, being in a great degree the results of causes which are removable;—3d, that these physical evils are productive of moral evils of great magnitude and number, and which, if considered only in a pecuniary point of view, should arouse the government and individuals to a consideration of the best means for their relief and prevention; and 4th, to suggest the means of alleviating these evils and preventing their recurrence to so great an extent."

The importance of sanitary inquiry and sanitary regulations, is enforced in the following paragraph:

"Sanitary regulations affect the pauper class of the population more directly than any other, because they live in situations and circumstances which expose them more to attacks of disease. They are more crowded, live more in cellars, their apartments are less ventilated, and more exposed to vapours and other emanations, &c., hence, ventilation, sewerage, and all other sanitary regulations, are more necessary for them, and would produce a greater comparative change in their condition. The influence of drainage upon the health and lives of the population, is too well known to require, at this day, any argument. Almost every one has heard of the effects of marshy soil, in country situations, producing intermittent fever, or fever and ague, and of the entire disappearance of the disease, simply by draining off the water, and permitting the ground to become dry. Its results in populous cities are equally well marked. The last instance which has come to my knowledge is one stated by Professor Buckland, that in St. Margaret, Leicester, England, containing 22,000 inhabitants, it appeared that one portion of it was effectually drained, some parts but partially so, and others not at all. In the latter, the average duration of life is *thirteen years and a half*, while in the same parish, where the drainage is better, though only partial, the average is *twenty-two years and a half*, showing the frightful effects of a bad atmosphere. It were easy to quote several instances, some important ones, from London statistics, but it is unnecessary, as I presume the fact will not be disputed, that sewerage and its kindred measures, exert a striking influence over the condition and duration of human life."

Dr. Griscom thus describes the arrangement of the houses of thousands of the poor and needy:

"In these places, the filth is allowed to accumulate to an extent almost incredible. Hiring their rooms for short periods only, it is very common to find the poor tenants moving from place to place, every few weeks. By this practice they avoid the trouble of cleansing their rooms, as they can leave behind them the dirt which they have made. The same room, being occupied in rapid succession, by tenant after tenant, it will easily be seen how the walls and windows will become broken, the doors and

floors become injured, the chimneys filled with soot, the whole premises populated thickly with vermin, the stairways, the common passage of several families, the receptacle for all things noxious, and whatever of self-respect the family might have had, be crushed under the pressure of the degrading circumstances by which they are surrounded.

"Another very important particular in the arrangements of these tenements must here be noticed. By the mode in which the rooms are planned, *ventilation is entirely prevented*. It would seem as if most of these places were built expressly for this purpose. They have one or two windows, and a door at one side of the room, but no opening anywhere else. A draught of air *through*, is therefore an utter impossibility. The confined position of the dwelling itself, generally, prevents the access of the external currents of air, even to the outside, to any considerable extent. The window sashes, in addition, perhaps, are so arranged, that the upper one (if there are two) cannot be let down, being permanently fastened up; hence the external air, poor as it is, cannot visit the upper section of the room, unless by opening the door, by which the interior of the room is exposed to view. If there is a sleeping apartment, it is placed at the extremity of the room farthest from the windows, is generally but little larger than sufficient to hold a bedstead, and its area is reduced, for air, by the bed furniture, trunks, boxes, &c., and having no windows, fresh air and sunlight are entire strangers to its walls. In this dark hole there is, of course, a concentrated accumulation of the effluvia of the bodies and breaths of the persons sleeping in it (frequently the whole family, several in number), and this accumulation goes on from night to night, without relief, until it can easily be believed the smell becomes intolerable, and its atmosphere productive of the most offensive and malignant diseases. There is no exaggeration in this description. I cannot too highly colour the picture if I would. What, then, will be thought of the condition of thousands of our fellow citizens in the *winter season*, when every crevice is closed to keep out the cold air, and when I state, that what I have described, I have repeatedly seen and felt in *summer*, when the windows and doors are opened to the fullest extent, day and night, admitting all the ventilation possible, small as it is.

"I have had recent occasion to visit several of these pestiferous places, and I pen these paragraphs in the month of August, with their sight and smell fresh upon my senses.

"The almost entire absence of household conveniences, contributes much to the prostration of comfort and self-respect of these wretched people. The deficiency of water and the want of a convenient place for washing, with no other place for drying clothes than the common sitting and bed room, are very serious impediments in the way of their improvement. Without any convenient or safe place to deposit wood, or coal, or food in large quantities, all

their purchases are by "the small," from the neighbouring grocer (who is perhaps the landlord), at prices from 10 to 50 per cent. above the rates at which they might be obtained, under better circumstances.

"But the most offensive of all places of residence are the *cellars*. It is almost impossible, when contemplating the circumstances and condition of the poor beings who inhabit these holes, to maintain the proper degree of calmness requisite for a thorough inspection, and the exercise of a sound judgment, respecting them. You must descend to them; you must feel the blast of foul air as it meets your face on opening the door; you must grope in the dark, or hesitate until your eye becomes accustomed to the gloomy place, to enable you to find your way through the entry, over a broken floor, the boards of which are protected from your tread by a half inch of hard dirt; you must inhale the suffocating vapour of the sitting and sleeping rooms; and in the dark, damp recess, endeavour to find the inmates by the sound of their voices, or chance to see their figures moving between you and the flickering blaze of a shaving burning on the hearth, or the misty light of a window coated with dirt and festooned with cobwebs—or in search of an invalid, take care that you do not fall full length upon the bed with her, by stumbling against the bundle of rags and straw, dignified by that name, lying on the floor, under the window, if window there is;—all this, and much more, beyond the reach of my pen, must be felt and seen, ere you can appreciate in its full force the mournful and disgusting condition in which many thousands of the subjects of our government pass their lives.

'There vapours, with malignant breath
Rise thick, and scatter midnight death.'

"There are two features of a cellar residence which more especially render them objectionable; 1st, the dampness, and 2d, the more incomplete ventilation. In *any* cellar the impossibility of access for the heat of the sun to the parts of the soil adjacent to the floor and walls, and the absence of currents of air through the room, keep it much more damp than rooms above ground, where the heat and air have freer access. This is emphatically the case with *inhabited* cellars, inasmuch as the inmates are careful to exclude the external air by closing all the avenues of its approach, in order to preserve the temperature high in winter and low in summer. The moisture, whose escape is thus prevented, is in itself a very prolific source of disease, and combined with the darkness and impure air of these places, is actually productive of a great amount of sickness. Could the sun and air be made to reach them, and were it possible to establish a sufficient ventilation through them, much of their noxiousness would be relieved; but under no circumstances can they be made fit for the residence of *living* beings; they are properly adapted only as receptacles for the dead.

"In addition to these impediments to the drying of these places, they are very often so situated, that the surface water finds its way into them at every rain storm. It may be remembered that in the summer of 1843 all the underground apartments in many sections of the city were completely flooded by a deluge of rain."

On the topic of ventilation, the author points out the deficiency of an adequate supply of fresh air in one of the public infant schools of the city (N. Y.), and also the dormitories of the House of Refuge, and cells of the City Prison.

A large majority of the cellar and court population of the city, consists of persons of foreign birth and of their children, and they are the greatest sufferers from sickness, and furnish the largest proportion of deaths.

"As a great part of the population of these places are destitute of the means of paying for medical assistance; the duty of ministering to them in hours of sickness, falls upon the Dispensary Physicians. I find, upon examining the records of their labours, the reports of the three medical charities, for the year ending March, 1844, there were prescribed for at the offices, and the homes of the poor, at the

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| Northern Dispensary, | 13,317 | Patients, |
| Eastern | " | 17,107 |
| New York | " | 23,858 |

Total, 54,282

From this number a deduction is to be made of those vaccinated, being 4505. In visiting the sick poor at their homes, however, it happens very frequently that some are prescribed for, whose names are neglected to be entered, so that it is perfectly safe to estimate the number of sick persons who received aid from these charities, to be over 50,000 in one year. In the corresponding year there were admitted into the Alms House Hospital 2332 patients, and into the City Hospital, about 1000, exclusive of seamen, making a total of over 53,000, without enumerating the sick poor attended by private charity."

"Of the Dispensary patients, about 60 per cent. are natives of other countries, and if it were possible to ascertain the parentage of the children receiving aid from these institutions, we should find a larger proportion than this directly dependent upon foreigners. There is no doubt that 75 per cent of them are either immigrants, or the children of such."

Females, as most exposed to the deleterious agencies under the circumstances already detailed, are the greatest sufferers from disease. Reference to the Dispensary returns shows, that in some years the proportion of females to males, prescribed for, has been as 12 to 10½; in others, 12 to 8½ and in one instance as 19 to 11.

Letters from medical gentlemen and missionaries among the poor, are introduced by Dr. Griscom in his "Discourses," corroborating the positions previously laid down. The dependence of the community on the labour, and consequently on the health of its members, is pointed out by the author, who offers valuable suggestions for a new arrangement for, and proper duties of a sanitary police. It seems that the city Solons of New York, who coming in as representatives of "Nativism" in all its purity [nudity?], were expected to make some approaches to a civic millenium, ordained that the city inspector, who for 15 to 20 years past had been possessed of medical attainments and qualifications, would be even more capable and efficient without a medical or even a literary education. It would be difficult for the most radical loco-focoism to match this display of Dogberry wisdom: it could only find a parallel among the Mormon saints.

On the subject of *grave-yards*, Dr. Griscom says:

"While writing this communication, there applied to me for medical advice, a young man, who had gone, in good health, into a vault of a church in a densely populated part of the city, to see the coffin containing the remains of a relative; he had been in but a few moments when the effluvia was so offensive and powerful, as almost entirely to overcome him. He immediately retired, returned home, and when I saw him, three hours after, he was labouring under a considerable degree of fever, and other disordered symptoms, which he said had all come on since his visit to the vault. He thinks the vault must have contained not less than 200 bodies. The place has before been complained of, and it is difficult to avoid the belief that more or less injury must be inflicted by it on the health of the neighbourhood."

As much of the evils described and many others by which the labouring classes suffer, are attributable to their ignorance of the laws of life and health, the author very properly recommends that physiology, as applied to the laws of life and prevention of diseases, be made a subject of study in all our private, public, and common schools.

The community in which he resides and the public generally, for in such a question all are more or less interested, must be under great obligations to Dr. Griscom for his searching exposition of the malign influences that destroy public health, and affect seriously public morals, at the same time that they diminish public wealth and affect national prosperity.

Treatment of the Insane.*

One of the pleasantest features of the present age, amidst its agitations, innovations, and love of misrule, is the more philosophical and kindly treatment of the insane. Hygiene, therapeia, and religion, are, in this instance, as indeed they ought always to be, united; each aiding the lessons of the other, for the benefit of a numerous class of infirm and diseased minds, whose possessors were once treated, for the most part, as demoniacs, bearing marks of the anger of an offended Deity, and sometimes as objects of superstitious reverence; but in either case, their state was deemed hopeless and irremediable.

Almost every fresh annual report of this or that asylum, gives evidence of additional amelioration in the treatment of the insane; some restriction removed, some positive pleasure gained for the benefit of the inmates. So bright, indeed, is the colouring of the picture, that one is almost tempted to wish to exchange the scenes of bustling anxiety and strife, and too often of violent passion out of doors, for the tranquil yet varied occupations and enjoyments that seem now, as a matter of course, to fall to the lot of those who are inside the walls of an insane asylum.

The proposition laid down by Dr. Woodward, physician to the Asylum at Worcester, Mass., that "the insane should never be idle," is now very generally carried out; and thus one great cause of unhappiness and paroxysmal attacks is removed—and an advantage given to them over the idlers, bourgeois, and *faineants* of all kinds, who infest nearly every community, melancholy creatures themselves, and the provocation to melancholy in others. The following, among a large number of examples familiar to superintendents of these institutions, may be mentioned at this time.

"During the last spring," says the Superintendent of the Bloomingdale Asylum, Dr. Pliny Earle, who had just before been advocating the advantages of manual labour, "two farmers, each of whom possessed a good farm, were admitted into the Asylum,

one about a week after the other. They were labouring under the most abject form of melancholy, and had both attempted suicide. In less than a month, their condition being already somewhat improved, they expressed a willingness, and one of them a strong desire, to work out of doors. Being furnished with implements they daily went out together, unaccompanied by any other person, and worked upon the farm with as much apparent interest as if it belonged to themselves. Under this course they continued rapidly to improve, and both were discharged recovered, one at the end of six weeks and the other three months from the time of their respective admissions."

Of another variety of manual labour and means of healthful occupation, Dr. Kirkbride, of the Pennsylvania Hospital for the Insane, remarks: "The workshop continues to be an interesting and important division of the means for the employment and amusement of the patients, as well as for the general purposes of the establishment."

On the score of *amusements*, Dr. Woodward says; "Riding, walking, dancing, music, and various active and sedentary games, are all useful to occupy the time and divert the mind. Active games promote health by the exercise which they give and the pleasure they afford. There can be no difference of opinion as to the utility of riding, walking, and other active exercises, for most of the inmates of hospitals for the insane. They are universally adopted in such establishments, and such abundant testimony in their favour must establish the fact of their usefulness."

"PARTIES. Social intercourse is extremely useful to the intelligent and convalescent insane. Whatever brings them within the sphere of customary influences, and makes a residence in a hospital appear like a family or social circle, is calculated to promote their recovery. In this hospital the matron's parties, held twice a month, where the patients in considerable numbers meet to spend the afternoon socially and profitably, have been both useful and agreeable. At these parties much clothing and bedding for the patients is made, also articles for sale, by which the library is replenished and made valuable.

"There is also much visiting from one gallery to another, and to the apartments of the matron and family, where an agreeable hour is often spent in cheering and comforting the unhappy, and in increasing the quiet and self-control of the more excited,

* Twelfth Annual Report of the Lunatic Hospital at Worcester. December, 1844. pp. 112. 8vo.

Twenty-fourth Annual Report of the Bloomingdale Asylum for the Insane. For the year 1844. pp. 55. 8vo.

Report of the Philadelphia Hospital for the Insane for the year 1844.

American Journal of Insanity, Nos. 2 and 3.

thus leaving a favourable impression calculated to produce contentment and promote recovery. The more nearly the condition of the insane can approximate to that of the world abroad the better. The hospitals for their care and recovery should be as much like private apartments as possible, when not incompatible with security and protection from external influences. A large number of patients, who spend the day in active and useful employments abroad, spend the evening in the social circle, singing, reading, and playing games in the different apartments of the institution, where they act freely in whatever they do conformable to the lenient government every where adopted."

Dr. Earle informs us that "riding and walking are very generally appreciated and enjoyed; they give an agreeable variety to the course of life, present new scenes to the view, afford exercise, and thus contribute to enjoyment and promote the restoration of health."

"The bowling alley was much resorted to throughout the warm season, and the noise of the falling pins was generally among the cheerful sounds of the summer mornings. The quoits also afforded their share of entertainment. The bagatelle table is one of the sources of amusement most frequently laid under contribution. There is one man who plays more or less every day, and sometimes for hours in succession. Chess, chequers, cards, dominoes, 'Doctor Busby,' and other games severally contribute, in a greater or less degree, to cheerfulness and enjoyment within doors.

"On one evening of each week a party assembles in the family parlour, for the purpose of social intercourse. The officers, and from fifteen to twenty of the patients, both ladies and gentlemen, are generally present. The ordinary refreshments of evening family parties, are served on these occasions. Balls are occasionally given, at which a greater number of the patients assemble than at the parties. At the last entertainment of this description there were about thirty of each sex, which does not materially differ from the number ordinarily in attendance. The festivities of the evening afforded very general satisfaction. There was cheerfulness without extreme hilarity, gaiety without boisterousness, and a pervading disposition to participate in the enjoyment—to please and to be pleased. Could a stranger, ignorant of the place, have looked upon the assembly, he would hardly have imagined himself to be within the walls of an Asylum for the Insane."

To the same purport is the experience of Dr. Kirkbride, who truly asserts:

"It is not possible to have too great a variety of means for the employment and amusement of the patients of a hospital for the insane. *The monotony of hospital life* is a frequent subject of complaint, and requires no little attention and skill, and a multiplicity of means to obviate. A numerous and efficient corps of attendants, ample to keep up the supervision in the wards, and at the same time to have every patient as much out of doors and engaged in exercise or amusement as may be deemed advantageous, is the first step to prevent its existence. To attain the same object for those who do not choose to walk out, and for all, in inclement weather, a great variety of games and more intellectual pursuits render great assistance.

"The social parties, frequently attended by from eighty to one hundred individuals, and the musical entertainments, held at short intervals, continue to exercise a beneficial influence. They are often a source of real enjoyment, and perfect propriety of behaviour has thus far invariably attended them."

LITERARY OCCUPATION. The higher standard of treatment of the insane at the present time is manifested in this single sentence in Dr. Woodward's report. "A library of well selected books is essential to a hospital for the insane." He adds: "Religious reading is enjoyed by many. All have free access to the Bible, and few if any, are injured by it." And again:—"Many prefer light reading, tales, periodical publications, newspapers, &c. A great number of these are sent to us by our friends, and many are regularly taken." To many of the inmates, the reading of newspapers conveys as much gratification as similar reading does to their friends and acquaintances engaged in the daily routine of business and pleasure. "Writing is frequently as useful as reading. We are in the habit," remarks Dr. Woodward, "of indulging those who desire to write letters and other compositions for amusement as a means of expending excitement. By the compositions of the insane, we can often judge more accurately of the state of the mind than by conversation."

At the Bloomingdale Asylum there is a reading-room, furnished with periodicals, newspapers, and a library of about five hundred volumes of scientific, historical, and miscellaneous books. There are few of the patients, as we learn from Dr. Earle, who have not made use of the books. "Hence, some of the halls which were formerly the most noisy and disorderly, have become as strongly characterized for their general stillness and good order. It may also be observed, as not the least re-

markable feature of this experiment, that the destruction of books is probably not to half the extent that would occur among the same number of children. Indeed, it is found, upon inquiry, that but one book has been seriously injured."

Dr. Earle has carried still farther the scheme of intellectual occupation of the inmates of the Bloomingdale Asylum, as we learn from the following passages in his report.

"A few weeks since, I commenced, by way of experiment, a series of lectures upon miscellaneous subjects, for the benefit of the patients. My anticipations have been more than realized in the interest which has thus far been manifested in them, and it is constantly determined to continue them, giving one every week throughout the winter. Nine lectures have been delivered, upon the following subjects:

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| Sketches in Greece . . . | Two Lectures. |
| " " Malta . . . | One " |
| The Elements and Analogies of Physical, Intellectual, and Moral Beauty . . . | Two " |
| National and Local Peculiarities . . . | One " |
| Physiology of the Eye and the Phenomena of Vision . . . | Two " |
| Physiology of the Muscular System . . . | One " |

"These, with but one exception, have been illustrated by a series of diagrams and pictures, painted upon cloth, of a size sufficient to enable every person in the audience to obtain a distinct view of them. The lectures are frequented by from sixty to seventy of the patients, and their conduct is marked by order, decorum, and attention. Even the most abstract of all the subjects hitherto discussed, the "Principles and Analogies of Physical, Intellectual, and Moral Beauty," was far more generally appreciated than might be supposed, and we do not recollect ever to have attended a lecture at which there was a greater degree of quiet or becoming deportment among the audience. The following subjects will be discussed in the ensuing lectures.

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| " Physiology of the Brain and Nerves. | |
| " " Heart and Blood-vessels. | |
| " " Organs of Breathing. | |
| " " Ear. | |
| " " Organs of speech. | |
| Electricity. | |
| Oxygen, Hydrogen, and Nitrogen Gases. | |
| Descriptive Anatomy. | |
| Descriptions of London, Edinburgh, Dublin, Amsterdam, Paris, Venice, Florence, Rome, Naples, Smyrna and Constantinople. | |
| "The lectures upon physiology and astronomy, will be illustrated by diagrams; those upon chemistry by experiments; and the others by maps and plans of each city, together with views of some of their most important edifices | |

and other distinguishing features. These means of illustration, so valuable to all, are particularly useful to an assemblage of people like those in question, inasmuch as their attention is more readily secured by appealing to the *eye* than to the *ear*. To them the language of Horace is peculiarly applicable.

"Words, which address the *ear*, are lost, and die

In one short hour, but that which strikes the *eye*

Lives long upon the mind; the faithful sight Engraves that knowledge with a beam of light."

"The several sources of instruction herein mentioned are among the principal promoters of peace, tranquillity and order, they are some of the most valuable aids in restoring the mind to its original healthy action. Banish them from the asylum and halls* would present a far more melancholy scene of intellectual and moral desolation."

Social readings are thus spoken of by Dr. Kirkbride, after reference to long winter evenings and intellectual amusements.

"During these hours, I have been much gratified by observing the pleasant change that has been produced, by having the patients of certain wards regularly collected in the parlors, on those evenings not devoted to other objects, and having the supervisors of the respective wings to spend an hour in reading from works likely to interest their auditors. The effect has been to make an hour, that formerly was to many particularly dreary, one of the most pleasant in the whole day. In the lodges, and in other wards, some of the attendants spend considerable time in reading to the patients under their care; and the result has been so satisfactory, that its regular performance will probably soon be made a part of the daily duties in certain divisions of the house.

"Throughout the past and present winter, we have frequently used, during the evening, for the same object, a very fine magic lantern. The great variety of subjects which may be presented with a full assortment of well executed slides, makes it a very satisfactory mode of combining instruction with amusement. It has also another advantage, — it can be exhibited in the most refractory wards without difficulty, and the patients in our lodges have enjoyed it almost as frequently as those in any other section of the house."

Farther means of instructive amusements are indicated by Dr. Kirkbride, in the following paragraph.

"Among the objects in contemplation, in addition to the means already indicated, and some of which are fairly commenced, — all tending to this same object of preventing hospital mo-

* The word "*hall*," at this institution, has the same signification as "*ward*" in ordinary hospitals.

notony,—are the enlargement of our library and collection of pictures and engravings,—a small philosophical apparatus,—a collection of rare or curious animals that may be kept without great difficulty,—a mineralogical cabinet, and a museum of curiosities."

Of the religious instruction by sermons and prayers, in Lunatic Asylums, we have spoken on former occasions, and of the order and decorous attention manifested by the inmates, who participate in large numbers in these exercises.

This is altogether a more pleasant and encouraging picture of life in a Lunatic Asylum, than would have ever been sketched by fancy a few years ago, and more so, we know, than is now generally imagined by the people at large. We might give it greater extension, were we to draw from other descriptions than those now before us. These, it is believed, in all essential features, would be nearly of the same character. We do not mean to say that all the asylums in the United States deserve this praise. That in connection with the Philadelphia Almshouse, for example, is sadly defective in many of the requisites for the comfort and care of its unhappy inmates. When will it be reformed, and who is to begin the work? The medical officers of the house, including the Hospital called Blockley or Pennsylvania, have, it is true, no legislative, and but imperfect executive powers; but, does not justice to themselves exact a firm, yet temperate remonstrance against the mismanagement of the department of the insane?

In the second number of the *Journal of Insanity*, there is an instructive analysis of a volume, entitled *Report of the Metropolitan Commissioners in Lunacy, to the Lord Chancellor*: presented to both Houses of Parliament by command of her Majesty; London, 1844.

"By act of Parliament the Commissioners in Lunacy are directed to visit all licensed Asylums for the reception of the Insane in England and Wales, except the Hospital at Bethlehem, at least once a year, and some of them more frequently.

"From the Report before us, it is evident they have faithfully attended to the duties assigned to them, and carefully and minutely examined each Asylum, and the condition of the patients; inspected their bedding, clothing, and food; examined the methods of warming and ventilating the buildings; and inquired into the medical and moral treatment of the patients, their occupations, amusements, &c."

"The total number of Lunatic Asylums which the Commissioners are authorised to visit, amount to 166—viz., 12 county Asylums; 5

county and subscription Asylums; 11 Asylums of a mixed character, maintained partly by subscription, and partly by income arising from charitable foundations; 2 Military and Naval Hospitals; 99 houses licensed by the Justices in session, viz., 59 which receive private patients only, and 40 which receive pauper as well as private patients: 37 houses licensed by the Metropolitan Commissioners, viz., 33 which receive private patients only, and 4 which receive paupers as well as private patients.

"These Asylums, they state at the commencement of their Report, 'exhibit instances of almost every degree of merit and defect. Some are constructed on an extensive scale, and combine most of the advantages and comforts of a wealthy establishment. Others are mean, poor, confined within narrow bounds, and almost wholly without comforts or resources of any kind. Some are situate in open and healthy places, in the midst of large airing grounds and cheerful prospects. Others are in the centre of towns or populous suburbs, without good air, and without space sufficient for daily exercise. In some places books and amusements are furnished abundantly for the benefit of the patients, and various means of occupation, adapted to their capacities and previous habits, are provided. In others, the lunatic is left to pass his time listless and unoccupied, or occupied only with the delusions that disturb him, and which thus, being diverted by no amusement or employment, in the course of time become strengthened, and not to be removed.'

"The result of their observations are arranged under the following heads:

"1. The different classes of Lunatic Asylums, their construction, condition, management, and visitation.

2. Condition of paupers on admission.

3. Forms of disease, medical treatment, diet and classification.

4. Occupations and amusements.

5. Restraint.

6. Religious services.

7. The admission and liberation of patients.

8. Statistics of insanity.

9. Criminal lunatics.

10. Wales."

Various tables of the report are introduced into the analytical article in the *Journal*. We may perhaps recur to them and to some details on the management and neglect also of pauper lunatics and criminal lunatics, if the subject of a State Lunatic Asylum is again brought up.

We cannot enter just now into the therapeutical treatment of insanity, to which the attention of our readers will have been, however, naturally directed by the extracts made in another part of the *Bulletin* from Dr. Woodward's Report, respecting the remedial value of narcotics in this disease.

THE BULLETIN OF MEDICAL SCIENCE.

VOL. III.]

Philadelphia, May, 1845.

[No. 5.]

A LECTURE ON THE MODERN IMPROVEMENTS IN SURGERY.

(Delivered 4th November, 1844.)

Being Introductory to a Course of Lectures on Surgery
in the School of Medicine, Park-street, Dublin.

By JOHN HOUSTON, Esq., M.D., M.R.I.A.*

Apology—Chemistry and Histology—The blood—Inflammation—Union by the first intention—Military surgery—Amputation—Lower jaw—Joints—Subcutaneous sections—Autoplasty—Aneurism—Nævus—Tracheotomy—Hydrothorax—Tympanitis—Hydrocephalus—Fractures—Artificial anus—Urinary diseases—Lithotomy and Lithotrity—Rectum—Syphilis.

GENTLEMEN, — For success in any of the pursuits of life, a proper estimate of the importance of the object aimed at, and of the extent of the means to be used for its attainment, are the first requisites. To no pursuit does this observation apply more forcibly than to that of medicine — a science which, by some strange perversion of fact, is regarded by men, generally, as one easy of attainment, but one which, nevertheless, as the practitioner finds, often when too late for remedy, requires much patient toil and hard-earned experience, and which, even at the end of a long and laborious life, is often left still unlearned. To inculcate, then, upon such of you as are beginners, as well as to remind those who have already made some progress in study, the extent and importance of the profession in which you are embarked, and to incite you to the necessary energy in its prosecution,

I have thought of the plan, which I shall now proceed to carry out, of bringing before you some of the most striking improvements which have taken place in latter years, confining myself to the topics which legitimately belong to my own department of surgery, and the details of which I shall have the opportunity of filling up in the progress of the course hereafter. A lesson of this kind, by exhibiting to view the pursuits and energies of the great men of our profession, and the path to fame which still lies open to new aspirants, may, I hope, make a useful and lasting impression on the plastic and ardent minds of, at least, some of my youthful hearers.

To render fully intelligible the modern improvements in surgery, it would be necessary to begin by demonstrating the modern improvements in anatomy and physiology, on which, especially, many of the former are founded; but whilst I cannot here stop to do more than allude to one or two, in illustration of the bearing of such investigations on practical surgery, I may take the opportunity of apprizing you that there never was a period in the history of the profession in which an exact knowledge of the structure and functions of the body — a knowledge to be obtained only by the combined aid of chemistry and histology — bore so directly on medical theory and medical practice. The retort and the microscope are now becoming as much the pocket companions of the practitioner as the lancet and the stethoscope; and it is curious to observe how the up-hill tracks of the stethoscope to public favour, in former days, have shadowed out that through

* Lancet.

which the microscope is now destined to wind its tardy way.

Recent researches in the physiology of the blood, in connection with the process of inflammation—that morbid condition which bears so important a part in all organic lesions—have thrown much light on disease.

The great mind of John Hunter saw and believed that the blood possessed in itself an independent life, even while circulating loosely in the bloodvessels; but he knew not the nature and seat of that vitality. The discovery was reserved for the physiologists of our days. There are particles termed globules floating in this liquid, about the 3000th part of an inch in diameter, or so small that myriads of them are contained in a single drop. It has been ascertained, respecting these globules, that they are, each and all, endowed with a definite and uniform shape, and with a development, in virtue of which they pass, by successive transitions, from a condition of origin to one of final evolution—a veritable organization, in other words—properties which give them a claim to the title of life as much as those which justify the application of that term to the ovum from which proud man himself dates his being. The atomic particles of which the blood is composed being thus individually alive, collectively, they form a mass, of which it may literally, as well as allegorically, be said, “For it is the life of all flesh; the blood of it is for the life thereof.” “For the life of the flesh is in the blood.”

But there is still another discovery which has been of late made, and which promises to be of great value in organic physiology—viz., that there are at least two kinds of globules in the blood, one yellow or red, the other transparent or white, and which differ from each other essentially, both in form and organization. The uses of these particles respectively, although involving some great and important functions in the animal economy, are not yet known with sufficient exactitude to be enunciated as ascertained facts in physiology. I may state, however, as a prevailing opinion, that the red globules, which consist each of a vesicle holding a ferruginous fluid in its interior, are the receptacles and the carriers of the oxygen which is destined to kindle and maintain the excitability of the different organs of the body, in the way that the oxygen of the atmosphere, propelled upon heated coals, raises and keeps up a flame; whilst the white globules are exclusively and essentially nucleated cells, floating stores of living elements derived from the food eaten—the true *pabulum vitæ* destined for the nutrition and growth of the frame. In furtherance of this latter view, Mr. Addison, of Malvern, has instituted experiments which show that an animal structure, bearing all the characters of cellular or rather fibrous tissue, may be formed, synthetically, out of the contents of these cells, by the addition of an alkali, and he ventures on the moral position that some analogous amalgam may take place in

the growth of animal tissues from the blood, both in health and disease. Now, without offering any opinion on that part of the theory of Mr. Addison which bears reference to the exclusiveness of the white globules in this office, I may state that I concur in his statements respecting the fibrillation of their contents by the action of a dilute alkali, and their fecundity in the production of granules. And I will even go further with him and say, that those granules are themselves, each and all, possessed of an independent life. I have repeatedly watched them, and have shown them to others, when burst from their cell-membrane, performing sundry independent, and apparently voluntary, evolutions in the field of the microscope, until, to the eye, the whole looked like a moving mass of creeping things. In this view, then, the blood is doubly alive, as exhibited—first, in its forming and taking part in the repairs of the animal machine, and, secondly, in the independent movements possessed by the ultimate particles of its matter.

The red globules are small and pliable, and glide with a facility which partakes almost of a repulsion, through the fine capillary tubes of the vessels, whilst the white ones, of a size nearly one-third larger, round and determinate in form, lag slowly along, as if influenced by a sort of prospective attraction to their walls. You can observe, in the vessels of the web of the frog, under the microscope, this double current—viz., one of red particles running in the centre of the stream, and another of white ones, stealing along the sides of the vessels; and if in the frog, so equally in man, the only difference between them in this respect being, that in the former, where the vessels are transparent, the blood is to be seen by the eye, whilst in the latter, in which they are opaque, the fluid is hidden from the sight.

Such being, incontestably, the manner of the circulation on health; yet us inquire what it becomes during inflammation. Under inflammation, the tendency of the white globules to linger in the part is increased. They accumulate in the capillaries, and so stop up the stream that the mass of the blood actually stagnates there; and hence the origin and final manifestation of the *rubor, tumor, calor, cum dolore* of an inflamed spot. These magnified diagrams of the circulation in the web of the frog's foot, taken from Dr. Hughes Bennett's new “Treatise on Inflammation,” Dr. Williams's “Principles of Medicine,” and Mr. Addison's “Experimental Researches,” and which, particularly the first, must be attentively studied, will enable you to comprehend readily all that I can here stay to inform you of.

Whether this stoppage be the consequence of the white globules sticking mechanically in the capillaries, in such a way that they cannot get in further; or whether it arise from a want of tone in the bloodvessels increasing the disposition to attraction between them and the globules—which of these, I say, is the true explanation,

is a point that at present engages the attention of pathologists. Be this as it may, however, the fact, and it is a very remarkable one, is as I have stated. The part being thus laden with an over abundance of the organizable materials of the blood, its condition becomes somewhat analogous to one of excess of nutrition, and as such the state of inflammation is regarded by some pathologists. The process of adhesion in soft parts; the development of bone in connexion with bone, of muscle with muscle, &c., as the result of the inflammatory state, are all easily understood under this view.

In respect of union by the first intention — a process of great importance in reference to surgical operations — we are no longer puzzled and perplexed, by vague and fanciful notions, about vessels uniting mouth to mouth, or shooting their tendril-like tubes from one side of a wound to another. The ancients were perfectly acquainted with the fact of such inosculation, but they knew not the *modus operandi* of the process. A beautiful experiment, instituted by Troja, shows how alive was their attention to this subject. He cut across the leg of a fowl by three sections, in such a manner and at such intervals as to allow one section to be well healed before he made another, but so completely, on the whole, that no part remained which had not been divided. He then killed the fowl, and threw injection into its bloodvessels, when he found that the injection had passed as fully into the toes of the amputated as of the unamputated limb, proving, of course, that it had found a way through the vessels formed *de novo* in the recently united textures. But Troja knew then no more of the matter than that the fact was so. Recent and valuable discoveries have, however, filled up this hiatus in pathology, and we now know that it is by a process of cell-genesis that the act is accomplished — viz., that the nucleated cells generated in the lymph exuded at the wound, and which serves as a sort of plasma or manure for their propagation, arranging themselves into all sorts of appropriate and necessary forms, are converted into textures analogous, in every respect, to those from whose neighbourhood they have sprung; forming thus, in one place, bloodvessels, in the very walls of which, as proving their cell-origin, the nuclei of the cells are discernible, lying before the eye, like pieces of wood-pavement, at definite given distances, and that even long after the growth of the vessels is completed; forming, in another place, nerves; in another, cellular tissue; and so on, until a complete re-establishment of the living organized medium is effected. These newly discovered facts, in connection with others to which they naturally lead, bearing on the maintenance of a healthy condition of the cells, as well as of the plasma in which they are to be developed, must have a most important influence both on the theory and practice of surgery.

For the present improved system of treatment of many surgical affections, much is due

to the *surgeons of the army*. It was in the field of battle that a practice which had existed for ages — that of dipping the stumps of amputated limbs into boiling pitch or oil, to stop the hemorrhage — was first discontinued. On one occasion, after a great slaughter in battle, and when his stock of boiling oil had run out, Ambrose Paré was obliged to leave the stumps of many of the wounded to what he considered the more unprofessional plan of wrapping them round in wet clothes, and in the expectation of finding, also, such dead by the next day. Matters turned out quite otherwise, however; for whilst those treated by the oil had been, of course, in pain, sleepless and feverish, those whose wounds were dressed simply, had enjoyed ease and sleep, and lay comparatively cool.

From this incident, the resources of the constitution in arresting hemorrhage began to be understood, and a more humane and judicious practice to be adopted. The reputation of the surgeon, at the time, became universal. The soldiers disregarded danger whenever he was present. On an occasion in which Metz was besieged, and the wounded were dying without medical aid, Paré was brought into the city. The soldiers, when apprised of his arrival, cried out, "Our Paré is with us! we have nothing to fear!" and then fought to conquer. The late Continental wars found an Ambrose Paré in every regiment. Our own Hennen and Guthrie, and S. Cooper and Ballingall, and the great Baron Larrey of Napoleon, have transmitted to us the records of the discoveries and improvements, as well as of the humanity and bravery, of their respective soldier surgeons. Civilians, even, have been found zealous and courageous enough to quit the safe retirement and practice of the domestic circle for such scenes of carnage and of danger, in order to be able to bring back to us intelligence regarding the nature and treatment of wounds, as noticed in such wide fields of observation. John Hunter, John Thompson, and Sir Charles Bell, have immortalized themselves by their devotion and services on this head.

In regard of *amputations*, the greatest modern improvement is, the frequency with which they are obtained from. When surgeons first got into the way of operating, limbs were removed without scruple, and, frequently, without just cause. They would appear sometimes to have been lopped off, as if to prove how well the body could maintain its existence without them. Morand relates that in the *Hôtel des Invalides*, at Paris, mutilated objects are in recollection, who had lost their thighs and arms, so that, unless assisted, they could not stir, and it was necessary to feed and wait upon them like newborn infants. That such a state of things has long passed away is quite true, but even within our own time still further improvements in this respect have been made, and many limbs are now saved, that, not long since, would, with a certainty, have been condemned to the knife.

Sir Benjamin Brodie informs us, in the last edition of his work on the "Diseases of the Joints," that it was the practice which prevailed in his early days, of amputating white swellings, as soon as their character as such was determined, that gave him those opportunities of investigating the disease in its early stages, on the pathological facts derived from which the chief value of his book depends. Our museums in this city, likewise, bear evidence to the same practice of early amputation; and those who possess such preparations of disease will do well to take care of them, as they are not likely to get many other similar specimens from the hand of modern surgery.

The same observations apply equally to many other cases, such as diseases of the mamma and of the testis, ulcers of the legs, hernia, injuries of the head, compound fractures and dislocations, &c., all of which yield, oftentimes, to improved plans of treatment, short of having recourse to the knife. Regarding hernia, the name of O'Beirne will be hereafter associated with it, as having introduced a plan calculated to save many a valuable life. I allude to his method of drawing the gas from the interior of the bowel by means of a long gum-elastic tube; and to the efficacy of which there is now abundant evidence from all quarters.

In respect of operations, then, true surgery rather avoids than courts them; and, in this respect, unlike what takes place in all other professions, the improvements introduced into it cause a diminution in the emoluments derivable from the practice of surgery. It is a well-established fact, that the incomes of medical men are much reduced from this cause, and yet, nevertheless, they persevere with laudable disinterestedness in their endeavours to effect still further improvements. Is not this the highest degree of philanthropy? In this city, more perhaps than in any other in the world, is this statement — regarding the avoidance of unnecessary operations — true. I do not hold out to you, therefore, the prospect of the exhibition of numerous surgical operations: on the contrary, I promise to you that, whatsoever hospital you may select for attendance, you will there see every judicious effort made at cure, by remedial means; before having recourse to the knife. The principle that you will see acted upon is, that to preserve a limb is better than to cut it off.

The diminution of surgical operations in this city is our highest boast; and I make it thus publicly, to contrast with one of an opposite character, which I have heard of as having been uttered elsewhere, for the ignoble purpose of attracting students to the schools. And I do so, still more especially, because I find that the records of the hospitals of Dublin have been pried into, in order to make a case for the assertion of such a discreditable comparison. But although, in one sense, there is a judicious diminution in the number of surgical operations, in another, there is an increase. Many

operations, unknown in former days, are now in common practice.

The grand exploit of amputating the *lower jaw*, even from its articulations, the boldness of which has been only equalled by its success, has now become a standard operation in surgery. Persons afflicted with the distressing and loathsome disease [showing a drawing of it], for which this operation is undertaken, were formerly allowed to die without any idea being entertained of the possibility of saving them; but now that a great mind, relying on a sound knowledge of the capabilities of the human frame, has set the example of extirpating the diseased mass *in toto*, many surgeons have fearlessly followed in the path thus laid open for them, and have derived honour from the success which crowned the enterprise. The success of this operation — both as regards immunity from danger, rapidity of convalescence, and the useful quality of masticatory apparatus which follows — is almost incredible. Mr. Cusack has operated twelve times, and here [showing them] are the preparations, casts, and drawings of the whole series. Now, in all these cases there has been but one death, and that, not as the result of the operation, but from erysipelas. I was present, a few weeks ago, at one of these operations, in which he removed one-half the jaw, including the articulation on one side. The operation was performed on a Wednesday, and, on the Monday following, when I visited the patient, I found the great external incision united from end to end by the first intention, and the patient himself setting up by the fire, and in the act of finishing a long letter to his friends. Before the end of the third week he was quite well, and had travelled home to the country — a distance of upwards of one hundred miles. It is quite certain, too, that after such operations, when half, and even more than half, of the jaw bone is removed, the individuals, nevertheless, retain good powers of mastication and of speech. And shall I not call this a *modern* improvement in surgery, when the great author and champion of it is seated amongst us in this room?

There is an improvement, of somewhat the same kind, and one for the introduction of which into practice, Sir Philip Crampton, of this city, and Mr. Syme, of Edinburgh, share the honour — viz., the removal, in diseases of certain joints, of the unsound parts only of the bones. In affections of the elbow-joint this may be obviously a great improvement, as the preservation of the hand is a most desirable object in every case. But, in regard of the knee, neither the value nor propriety of the operation is so striking. On the whole, however, it is a bold and important innovation on the old practice of cutting off an entire limb on account of disease in a part only; and reflects honour on the distinguished gentlemen who have conceived and carried it into execution.

Of all the modern improvements in surgery, none are more curious, and few more import-

ant, than those of the kind that are called operations by the *subcutaneous section* — operations which consist in dividing deep parts, more especially tendinous and muscular structures, from within as it were, or, in a manner, to exclude the part thus wounded from any communication with the external atmosphere. Examples of its application are seen in the new and successful methods of removing the deformities of club-foot, wry-neck, &c. Surgeons, influenced, perhaps, in some degree, by the aphorism of Hippocrates, that "wounds of tendinous parts are mortal," were, until very lately, afraid to meddle with such textures. Even so recently as the days of my own pupilage, warnings on this head were reiterated, year after year, in public lectures. Inflammation of synovial membranes, erysipelas, and lock-jaw, were the quicksands held out as besetting the application of the knife to such textures. But now such dangers are only looked upon as chimerical. Five hundred operations, by the subcutaneous section have been lately counted as having been performed without the occurrence of a single instance of bad consequence. The first attempt at an operation of this kind was made in Holland, in the year 1685, by Isaacus Minius, but it was badly done, and, as it failed, was not repeated. The second was at Montpelier, in 1816, by Delpech, and although a certain amount of success accompanied the attempt, the operation was not followed up, and it became a dead letter. The third epoch in the history of the operation is 1831, when it was taken up by Stromeyer, in Germany, who practised and advocated it so successfully, that it has found favour in all parts of the world, and has now become a favourite and fashionable operation. The discovery of a new principle in medical science is soon found to diffuse its benefits in various directions, and so it has here. The practice, which at first was adopted solely in reference to division of tendons in deformed limbs, is now applied to the relief or cure of many other ailments. It has been employed by my friend and colleague in the City of Dublin Hospital, Mr. Williams, for chronic thickening, with enlargement and distention of bursal sacs, such as that in front of the knee in charwomen, and for which, previously, there was no known remedy but excision. This operation I have myself performed on several occasions with success. The practice of scarifying the ends of bones in united fractures, by the subcutaneous section, for the purpose of promoting the secretion of callus, is another new application of the principle. Deformities from burns and scalds sometimes admit of remedy by subcutaneous division of the contraction. And curvatures of the spine are said to have been removed by extensive hidden incisions of the muscles of the back. M. Guerin tells us that he divided fifty muscles in a hump-back in this way, and not only was there success after the operation, but also an absence of all pain or local inflam-

mation in the parts so divided. I mention this, however, not so much in laudation of this mode of treatment in such cases, as in illustration of the principle and the fact, that extensive deep incisions give rise, if unaccompanied by exposure to the air, to comparatively little local disturbance.

You have all heard of the operation for the cure of squint. This operation suggested itself out of the discoveries of Stromeyer, and deservedly holds a place among the modern improvements in surgery. But it is principally in its application to club-foot that such beneficial and unexpected results have flowed out of this discovery. This sad deformity, than which none other to which the frame is liable so thoroughly embitters life, or disqualifies for the taking a part in the common affairs of society, and which had, hitherto, set all attempts at remedy at defiance, now yields to the improved system, and is no longer the canker of domestic happiness, or the opprobrium of the medical profession. In childhood, this deformity may, with certainty, be now remedied; and, even in adult life, when the bones and other textures have grown into a confirmed misshape, it is extraordinary how nearly they may be brought back to a normal state by attention and perseverance after befitting subcutaneous sections.

Almost discrediting the first statements that reached us on this subject, I proceeded to put the matter to the test of experiment, when the results proved, to my satisfaction, the true value of the improvement. One case of the kind I may be permitted to state, by way of illustration. It is that of a fine young woman with talipes varus, the cast of whose foot is here exhibited. She was nineteen years of age, handsome, and intelligent, but exhibiting that timid and subdued mien which the consciousness of such a defect always gives to the character. The deformity was so immovably fixed, that I found it necessary to divide even a greater number of unyielding parts than common, as, in addition to several tendons of muscles and other fibrous textures on the inside of the foot, I had also to cut across completely, the broad plantar fascia. In three months, the foot presented, and retained, when stripped of the straightening apparatus, this perfect form [exhibiting the cast]. In six months she could stand on it, laying the sole to the ground with tolerable firmness; and in eighteen months she walked steadily and well, and had already got several sweethearts in her train; which circumstance I mention as being, perhaps, one of the best proofs I could offer of her having acquired a neat foot and ankle, and as one, certainly, of the chief sources of her gratitude to me.

It is impossible to conceive the amount of good which in future times may accrue to society at large, from the carrying out of such an improvement; but we are, nevertheless, in a condition, in some measure, to estimate and to grieve for the losses which the world has

sustained by even the tardiness of its introduction. Had this operation been known in the youthful days of Lord Byron, and applied to the relief of that nobleman's deformity, a genius which was soured by the consciousness of a personal defect, and which received therefrom a misanthropic bias, might have blossomed in the sunshine of generous boyhood, and, when mature, have brought forth manna, instead of gall and wormwood.

Closely connected with this treatment is that to which the term *autoplasty* is applied. This, which in the first instance was almost confined to separations of lost or mutilated noses, is now applied to an innumerable variety of other similar lesions. Taliacotius, in the year 1597, wrote a book on the separations of noses, and although, for long after the appearance of his work, his statements were not credited beyond his own locality, there can be no doubt now, from recent experience of the practice, of his having succeeded well in such operations. His fellow citizens of Bologna certainly believed in his surgical skill in this way, and also venerated his private character, as they erected to his memory a monument, representing him as clad in his professional toga, and holding a nose in his right hand.

From the time of Taliacotius, for nearly 300 years, we hear little of the operation. Perhaps satire may have had to do with the disrepute into which it fell. A few stanzas like the following, from *Hudibras*, were well calculated to bring it into discredit:—

"So, learned Taliacotius, from
The brawny part of porter's bum
Cut supplemental noses, which
Would last as long as parent breach;
But, when the date of Nock was out,
Off drop't the sympathetic snout."

In the year 1814, Mr. Carpué, of London, re-introduced it, and from this date up to the present time, the number and variety of the applications of the principle have become so great, that *autoplasty* has been reduced to a science, with names for the different classes and orders of the departments. Thus we have in connexion with the face alone, the operations of *cheiloplasty* (restoration of lips); *stomatoplasty* (opening up of a closed mouth); *rhinoplasty* (cementing deformities of noses); *genioplasty* (the art of restoring cheeks); *blepharoplasty* (repairing eyelids); *keratoplasty* (supplying a new cornea for the eye); *otoplasty* (mending the pavilion of the ear), &c.

There are three different principles or modes on which these operations are conducted.

The first, the Italian mode, as it is called, is that by transplantation; as, for example, where deficiency of the nose is supplied by a piece taken from the arm or other part of the body [showing plates].

The second, the Indian method, or that, by twisting; as where the deficiency is made up by dissecting a triangular flap of skin off the

forehead, and bringing it down on the nose by such a twist as will permit the outside of the skin to retain its forward position on the face.

The third, or French method, the principle of which consists in pushing or sliding a piece of integument from one place and making it grow on another, to fill up some defect in that direction; as where, after the removal of the scar of a burn, the neighbouring skin is loosened from the surface underneath, and brought so as to grow over and fill up the gap.

This Book of Beauty [showing M. Serres's work] shows the practice of one gentleman in this way. There is, perhaps, a good deal of picture-making in it; but to those who may be credulous on the matter, I beg to show a few pictures of cases of my own, for the accuracy and freedom from exaggeration of which there are many witnesses, and which tempt me to concur in the expression uttered by M. Roux—"Qu'il n'y avait rien d'impossible en fairedes restaurations de la face."

The operation of palato-raphé is one of the most interesting and beautiful applications of *autoplasty*. M. Roux, to whom we are indebted for so much light regarding it, has operated upwards of one hundred times in patients of all ages. I was myself one of the first in this city to practice it successfully [plates]. Sir P. Crampton, Mr. Cusack, and Mr. Hamilton, have also been successful in similar cases. Here is Roux's first instrument for palato-raphé; and here is one of great ingenuity and efficacy, lately invented by Mr. Samuel M'Cleau, of this city.

The extension of the practice of *autoplasty* to other regions of the body has been highly successful. Thus, the canal of the urethra has been restored by Earle, Cooper, and Dieffenbach, by pieces of skin taken from the scrotum. Jobert has applied *autoplasty* to the cure of vesico-vaginal fistula; Jameson, of Baltimore, and Gerdy, to the radical cure of hernia. Mr. Syme has, I am informed, cured fungi of the testis, which have been first proved by the microscope not to be cancerous, by covering them over with flaps of the integuments, brought from the sides of the tumour. And Clot Bey has successfully practised orcheoplasty even at Alexandria in Egypt; all which I mention as showing how the science of *autoplasty*, scarcely known more than thirty years, is already cultivated in numerous parts of the world.

Then there is the disease of *aneurism* [pointing to a drawing of a popliteal aneurism, which had caused death by inward bursting and extravasation among the muscles], that terrible malady in which the person who has the misfortune to labour under it—doomed to a premature and sudden death—looks with awful anxiety and trepidation at the throbbings of his heart in the tumour, not knowing how soon the moment may arrive when, by its bursting, his life's blood shall gush out and hurry him into eternity. This disease, for the cure of which ingenuity was supposed to have been

exhausted, has within the last year, and, I am proud to say, in this city, been the subject of a new and brilliant light. The hitherto ordinary and most approved method of cure in this affection has been that of tying the artery leading to the tumour; so as to arrest the current of blood and cause it to coagulate in the artery. But this method has one serious drawback — namely, that it involves the performance of a surgical operation, in itself a source of danger to life. The improvement I allude to, and which has been yet only practised for aneurism of the extremities, particularly popliteal aneurisms, consists in accomplishing the same cure without performing any operation at all. The knife and ligature, with all their risks and terrors, are here laid aside, and simple pressure on the main artery leading to the tumour substituted in their stead. To my esteemed friend, Mr. Edward Hutton, is due the introduction into practice of this improvement, one which places his name beside, if not before, those of Hunter and Hodgson, as a benefactor of mankind in this department of surgery.

I find that a case of popliteal aneurism was published in 1831, by Assalini, as having been cured by him by means of pressure on the femoral artery; but his practice has been little heard of and less copied. The late Professor Todd, too, of this city, had also, it is true, attempted a similar mode of treatment; but as neither of those cases were known to Mr. Hutton at the date of his first successful experiment, the method adopted and advocated by him may, truly, be regarded as original in his hands.

I have witnessed the development of this improved mode of practice with great interest and satisfaction, and, as far as trials have yet gone, it appears to be not only infinitely more safe than the old plan, but even more efficacious, as out of seven cases of popliteal aneurism, treated in this way, in Dublin, within the short period of one year, there has been only one failure, and in that the fault lay in the patient and not in the method of treatment. Following the example set by Mr. Hutton — Dr. Cusack, Dr. Bellingham, Dr. Kirby, and Dr. Harrison have treated cases in this way, and all with equal success. Dr. Bellingham's case, in which a second popliteal aneurism in the same individual was cured by this means, appears to me of particular value, as doubly proving the efficacy of the remedy. Within the last fortnight, a gentleman of great consequence and of large fortune, but with a constitution under which no operation could have been practised without imminent risk to his life, has been by this simple means, in the hands of Dr. Cusack, cured of a popliteal aneurism of such a size as to have already, in part, made a bursting. The practice has been also tried and approved of in London, by Mr. Liston. I regard it as decidedly one of the most important improvements of the day, in this or in any other country — not inferior even to lithotomy in its

capability of effecting positive good, and certainly far its superior in the negative quality of being incapable of, doing harm. [Here Dr. Houston exhibited the instruments used for compressing the artery, showing the several improvements which they have undergone from that first employed by Mr. Hutton to that last used by Dr. Cusack.]

Nævus, or *Aneurism by Anastomosis*, is another affection of the bloodvessels; in the treatment there has been great improvement of late years. These disfiguring and dangerous marks were formerly, when meddled with at all, treated by excision; and the directions most strongly inculcated were to the effect that the act of removal should be accomplished with as much expedition as possible, in order that danger might not arise from the profusion of hemorrhage which was known always to attend the operation. But danger to life was not the only inconvenience of this mode of remedy. Great disfigurement necessarily follows it, when, as frequently happens, some part of the face, such as the eyelids, the nose, or the lip [plates], happens to be the seat of the disease. A more accurate knowledge of the nature of the affection has led modern surgeons to the practice of curing it by the production of inflammation in its texture, and this they effect in a variety of ways, as, by the introduction of setons, sulphate of copper, nitrate of silver, or other irritating material, into its substance; or else, by acting upon it from without, through the medium of stimulating washes, or by inoculation with the vaccine virus. The inflammation thus produced is first followed by an enlargement and hardening of the part, which gives place in a little time to a diminution of bulk, and a return to a somewhat normal state. The orator Cicero derived his name from a pealike *nævus* of this kind on his nose (*cicero arictinum*, vetches); and if the surgeons of his day had been skilled in the simple means now in practice, and had applied it in his especial instance, doubtless — not to speak of the satisfaction which such a riddance would have been to the gentleman himself — we, at all events, should have been made acquainted with him by some other cognomen.

On the subject of *Tracheotomy*, a very remarkable incident has recently occurred, suggesting new views regarding the performance of that operation. The case of the celebrated engineer, Mr. Brunel, in which half-a-sovereign entered by accident, and remained in the wind-pipe, has been heard of by all the world. The mechanical ingenuity of Mr. Brunel suggested to himself the plan of inverting his body so as to allow the coin to run out of, as it had run into, his patulous trachea, and he accordingly made the attempt; but there was an element, a principle here to be encountered, such as is never taken into calculation in estimating the facilities and difficulties involved in the construction of locomotive or atmospheric engines, and which the medical man alone is con-

to deal with — namely, a self-acting spasm, the effect and the attribute of vitality, resisting the passage of any foreign irritating substance. Mr. Brunel's plan, in itself, therefore, failed, and the practical cause of its failure lay in the violence of the spasm which the coin produced in the muscles of the rima glottidis at the moment of its contact with that opening; indeed, he was nearly suffocated in the attempt. And here it was that the knowledge of the surgeon, superadded to that of the mechanist, completed the triumph of genius and of art, and saved the man. Sir Benjamin Brodie made an opening into the windpipe close behind the point at which the spasmodic action was known to occur, partly with a view of quieting the spasm (an effect, by the way, first pointed out by my friend Professor Porter, as one of the results of tracheotomy), but chiefly to give air to the lungs by a new and artificial route, and thereby afford time and opportunity for the foreign body to get past the obstruction. Mr. Brunel's body was then, as before, inverted, and, as was anticipated, the coin ran without further obstruction from the lungs into the mouth. Never did artistic and scientific skill, combined, produce a more marked, a more happy effect. The whole world rang with applause and congratulation.

There are some of what are considered purely medical subjects, to which surgical assistance has been of late most felicitously applied. One of these is what may be termed *acute hydrothorax*, a rapid and great effusion into the bag of the pleura, and the practice to which I allude is that of tapping the side with a fine trocar, so as to give escape to the fluid. A remarkable instance of this novel and bold practice lately occurred in this city, in the practice of my friend Dr. Stokes. A lady, the subject of this affection, was in great agony, and in danger so imminent that her pulse was gone, and she had passed from delirium to coma. On Dr. Stokes's recommendation, the operation of paracentesis thoracis, in the manner just spoken of, was performed. Immediate relief was given, and the patient got rapidly well. Another instance has been related to me by Dr. Stokes, of the same affection, only more chronic in character. Here, the bag of the pleura was so filled and distended, that the heart was pushed by the fluid from the left into the right side of the chest, and the ribs were driven out in the opposite direction. The same plan of treatment was adopted, and with equal success. Even during the process of drawing off the fluid, which amounted to several gallons, the lung could be followed by the stethoscope rising into its place against the ribs, and the heart could be tracked from right to left, until it had finally settled in its natural position. A remarkable phenomenon attended on the sudden change of place in the parts, even although that change had been from an unnatural to a natural position. The lungs and heart became both so violently agitated by the movement, as

almost to have had their functions suspended; but, in a little time, and aided by due medical attentions, they settled again — if I may so speak — to their work, and the patient got completely well. The innovation and improvement, as regards treatment, are here twofold; first, in operating at all in such cases: and, secondly, in substituting a small trocar for the scalpel — the latter change being of so radical a nature as almost to convert the practice by operation into one without operation.

The same kind of practice has been applied, by Sir Henry Marsh, to excessive *distention of the abdomen from flatus*, with the most soothing result, and without any bad effects from the operation. I knew a lady on whom Mr. Cusack operated several times in this way, in consultation with Sir Philip Crampton and Sir H. Marsh — the operation being performed with a fine trocar and canula, — and each time with much relief to the patient from the most painful suffering.

Even the cavities of the skull are not beyond reach of the exploring hand of the surgeon. Many cases have been of late recorded, and particularly one by my friend, Mr. Richard Butcher, in which the fluid of *hydrocephalus* has been drawn off by tapping, and, as is stated, often with favourable results.

Fractures of bones are not, at the present day, regarded with any of that alarm and apprehension, nor attended with the after inconveniences which formerly succeeded to such accidents. The principles which regulate the growths of new bone, thrown out for the purposes of reparation under injury or disease, are now so well understood, that we comprehend, in every case, as if carried on before our eyes, the several phenomena, in the exact order in which they actually take place, from the beginning to the ending of the process. We know, too, what circumstances are calculated to promote or retard, to render perfect or to spoil, the new growth; and if, from unforeseen or accidental causes, reparation does not go on, we have discovered the means by which to direct it aright, and to conduct it to a perfect consummation. The means to this end I shall explain to you on another occasion. As to the mechanical derangements attendant on fractures, and their remedies, they are now known with almost mathematical precision. Tell me, for example, the part of any given bone broken, and the cause of the accident, and I shall be able to inform you, without seeing the patient, of the precise nature of the displacement which the fragments have undergone, and, of course, to suggest the mechanical appliances fittest for restoring and keeping them to the right place. Certain fractures, such as Colles's of the radius, Pott's fracture near the ankle, &c., having had attention directed to them, by being made the subject of special memoirs, are well known, in this light, by the profession; but it is a fact, and a most important one to be borne in mind, that all fractures, as well as these, are respect-

tively equally fixed and determinate in their mechanical characters and consequences. In a fracture of the middle of the thigh, for example, there is rarely an exception to the rule that the lower fragment, rotated outwards on its axis, lies on a plane behind the upper fragment, in this way [showing specimens], giving rise to two marked kinds of deformity — namely, shortening of the limb and turning out of the toes; and any surgical appliances adopted here should, of course, have especial reference to the removal of these two defects, and to the prevention of their return during the period of the healing process, otherwise the patient will have been badly cured, and will feel and complain of the effects of the accident while he lives. Thus, if he happen to be fond of the chase, he will never after sit his saddle in comfort or in safety, from the mechanical change which has been allowed to come over his thigh-bone, at the seat of the fracture, converting it, from a bow-like arch which fits it as if intended by nature for horse-riding, into a straight line, or even changing the convexity of the bow from the outer to the inner side, in a manner to incapacitate it completely for such a purpose. Or, if he be a pedestrian, his limping gait and everted toe will remind him, every morning he rises, of his double misfortune; first, in having met with a bad accident, and secondly, with a bad surgeon — one, as he might say, unacquainted with the modern improvements of his art.

Our knowledge, at present, of the different conditions and results of fractures of the neck of the thigh-bone — an accident so common and so afflicting in old age — stands in striking contrast with that of our immediate predecessors. It was held by them that such fractures never became reunited by bone, and, as a consequence, attempts at such a mode of cure were discountenanced as not only unnecessary, but injurious. Such was the theory and practice of even the great Sir Astley Cooper. But how far is this changed? We now know that such cases are not only possible, but common. I saw this day an old gentleman who, about two years and a half ago, was under my care for complete, but impacted fracture of the neck of the thigh-bone. There is now perfect consolidation of the fracture, and he walks steadily and well, without the aid of either crutch or stick. We know, too, at sight, what cases admit of union, with tolerable certainty, from those in which the chances of such a happy result are few; and, still further, what is of equal consequence, we have learned the important fact, which all should know, that one of the conditions of this fracture, on which depends mainly the chance of reparation — viz., a certain remaining degree of coaptation, and the presence of certain unbroken shreds of the softer tissues — is such as to forbid a practice justifiable, or even necessary for diagnosis, in other fractures — namely, that of seeking for what is termed crepitus, inasmuch as the act of

doing so may displace the fragments and tear asunder the only remaining elements of future union, thereby taking away all chance of reparation. Want of due attention to this point may have been one of the causes of such infrequency of union in former times. Here, again, justice and candour compel me to introduce the names of certain of my countrymen; for it is a fact, that to Dublin is mainly due our knowledge of these important facts regarding fractures of the neck of the thigh bone, as the writings of the late much-honoured Professor Colles, and of my friends, Dr. Adams and Dr. Smith, bear evidence. Besides, our museums abound in reunited fractures of this kind; some of them without, others within, the capsule; sufficient, truly, to justify the promulgation of the principles and practice to which I have adverted, and to serve at once as the evidence and the basis of a new fact in surgery.

Some most important considerations have lately been brought before the profession by M. Amussat, of Paris, in reference to the establishment, by operation, of an *artificial anus* in certain cases of total obstruction of the bowels. The operation consists in making an opening through the abdominal parietes into the ascending or descending colon: and the cases in which it may be required are — first, some extreme varieties of imperforate anus in infants; and secondly, cases of invincible constipation from mechanical obstruction of the great intestines. Obstructions of a non-malignant nature, involving danger to life, may, by a counter-opening of this kind, letting loose the pent-up excretions, have their fatal tendencies counteracted; and, even in cancerous obstructions of the bowel, a new anus may, in the same way, soothe pain and prolong life. Such an operation might, in cases of this nature, be sometimes undertaken with as much reason, and in promise of as much good as some which are performed for strangulated abdominal hernia. Forty-three operations of this kind are recorded as having been performed: eighteen on adults, and twenty-five on infants, and out of these, I may state, as showing at least that the operation is practicable, and to a certain extent safe, that one patient, a girl, two days old, operated on for artificial anus, by making an opening in the sigmoid flexure of the colon, was alive and well at nineteen years of age; another, a boy, two days old, operated on in the same manner, and in the same part, lived to between sixty and seventy years of age; and a third, a woman, in whom the operation was performed on the descending colon at the age of forty-four, was alive seventeen years subsequently. The history of the operation is very interesting. About 1710, M. Littre recommended the opening of the sigmoid flexure of the colon for imperforate anus. In 1776, M. Pillore made an artificial opening into the cæcum, in an adult whose rectum was obstructed by a cancerous tumour. And in 1793, the individual whom I

have above alluded to as having lived to old age, was operated on by MM. Duret, Dubois, Dessault, and Dupuytren, and others have tried the operation with various degrees of success, but it is to M. Amussat — who has investigated the subject in a scientific manner, and tested the practicability and value of it by at least ten operations, as well on adults as on children — that we are indebted for the encouraging prospects which it at present holds out. The alternative of an artificial anus — an opening, in an unwonted and inconvenient situation, for the discharge of the excrement, is, indeed, a sad one, but, such as it is, it stands as one of the many illustrations of the increasing power of our art to smooth the pillow of sickness, or even to avert the stroke of death, when all other earthly aids have failed.

There is no operation, either in ancient or modern surgery, to be compared with that for the removal of diseased ovaria — an operation of very recent introduction, and one which, when the extent and depth of the incisions, and the importance of the parts exposed in it are considered, makes one shudder at the mere thought of it. Think, for a moment, of an operation in which the abdomen of a female, from top to bottom, is laid open by the knife — a great tumour, perhaps the size of the head, turned out for removal, and the delicate vital organs of the cavity exposed to the unwonted air, or the intrusive hand: think of all this, and then you can form some estimate of the operation termed *ovariotomy*. Yet, strange to say, this operation has been performed seventy-four times; and, stranger still, nearly one-half of the patients have recovered. The question is yet to be decided, whether such an operation is at all justifiable — viz., whether, on the whole, more good or evil is likely to follow its introduction into general practice. But the grand question is settled — we have the facts before us — that the human frame is abundantly capable of sustaining, and even of recovering perfectly from the effects of it. The great impediment to the settlement of the question of propriety is, the difficulty of determining, beforehand, the fit, from the unfit cases; of determining those in which the tumour is insulated and moveable in the cavity, from those in which it has contracted adhesions to the parts around; as in the former, the tumour admits of being turned out with facility, and rapid convalescence follows the operation; whereas in the latter, the surgeon, after having opened the abdomen, is obliged to desist in the midst of a terrible operation, leaving the unfortunate patient sadly the worse for his interference.

Diagnosis, then, is here the great desideratum. When our tact, in this respect, becomes so perfect that we can single out those cases which are not adherent, inside, from those which are so; and, still farther, when there shall cease to be any grounds of fallacy as regards the presence or absence of such a tumour — for it is a strange fact, that the operation of

ovariotomy has been more than once performed when there was no tumour at all to be found, upon the abdomen being laid open — when these points are settled, then, indeed, may this operation take a place, not only among the most remarkable, but also among the most valuable of the modern improvements in surgery.

In the wide field embraced under the term of *urinary diseases*, most striking and important improvements have been, of late, effected; perhaps to no other class has there been so felicitous an application of the twin sciences of chemistry and histology.

The due discharge of the functions of the kidneys is essential to the general well-being of the frame. The slightest inefficiency in this respect is felt injuriously somewhere, while serious lesion is fatal. And, on the other hand, changes in the health at large invariably disturb, in a palpable manner, the functions of the kidneys. These organs are then, truly, the barometers of the health, the urine representing, with the greatest delicacy, the quicksilver — only requiring a chemical and microscopic eye for the detection of its degrees and kinds of pathological changes.

The examples of derangements of the kidney producing general derangement of health, are numerous, and in all such it is chiefly by an examination of the urine that the nature of the lesion is to be ascertained. This is wherein the novelty lies. Persons have been long and lingeringly ill, and incapacitated from the ordinary duties of life. They have had dropsies, shiverings, convulsions, or even madness; and sometimes all these ailments together. They have been attended by the most skillful physicians, and they have died. Nevertheless, neither during life-time, nor *post-mortem*, was the nature of their malady known. They have been reported as having died of cerebral or liver disease, or simply of dropsy, and no doubt they were treated during life with a view to the cure of such supposititious affections. Hundreds, in all ages, have pined away thus; and yet it is only within the last ten or fifteen years that a full and satisfactory solution of the riddle has been made out. It was reserved for the genius and perseverance of Bright to trace these protracted conditions of illness, and those unstayed and melancholy deaths to their true source — viz., slow, insidious, and often almost unappreciable degeneration of the kidneys, now well known as the *morbus Brightii*. This disease, although in itself but little striking — and therefore so long passed over unobserved — is, nevertheless, sufficiently decided to spoil the secretion of the kidney, and send one of its most noxious excretions — the urea — which should be discharged with the urine, back through the frame, poisoning the springs of life at their source, and thereby agitating or paralyzing every vital function.

The pathological condition of the kidney, characteristic of such cases, is now well known

and established; but what is the evidence during life of its presence? What is the outward test of its existence at that period when a knowledge of it is most beneficial — viz., while it is still curable? The test is a chemical one — namely, the precipitation of albumen from the urine by nitric acid or by heat; and on this fact, simple as it may appear, so much stress is now laid, that a person with a permanently albuminous state of his urine is scarcely considered an eligible life for insurance; and, still more, such a person, it is well known, has a bad chance of recovery, if unfortunately he should happen to become the subject of any severe accident or operation.

There are various deposits or sediments found in the urine, the results and the evidences of certain corresponding diseases, and the exact nature of which — often a matter of great moment in diagnosis — can only be determined by the aid of the *microscope*. Such are globules of blood, of pus, or of mucus, or more especially crystals of salts, every variety of which is characterized by a special and definite form [showing a diagram], and the ascertaining of which determines with certainty the nature of the disease present. A case which I met with lately will illustrate this point. A medical gentleman asked my advice under the following circumstances: — He had gone to bed the night before in his ordinary health, but awoke in the middle of the night with excruciating pain in his right side, deep in the abdomen, and shooting down into the thigh. The pain had lasted two or three hours, and then subsided, leaving a sense of numbness in its place. He had little other complaint to offer. Suspecting from the symptoms the presence of a stone in the kidney or ureter, I subjected the urine to a microscopic examination, when two different objects, each of great value towards the diagnosis, presented themselves to my view — one scattered globules of blood, the other crystals of the oxalate of lime, those beautiful octahedral crystals discovered lately by Dr. Golding Bird. The latter I regarded as evidences of the oxalic acid diathesis, and of the existence of a stone somewhere; the former I looked upon as proving that stone to have been in motion, and in its transit from one place to another, to have torn the surface of the lining membrane. Such were my inferences from those microscopic data; and on them I founded the opinion which I gave, and the treatment which I recommended. I said to my patient, that perhaps, without any further pain, but most likely, after a few more such stings as he had before experienced, he would probably void a small stone, which, in such event, would certainly be of the oxalate of lime or mulberry kind. Of course I directed what I considered appropriate treatment in the meantime. On the fifth day thereafter, this gentleman again called upon me. He told me, that on the third night succeeding to that on which he had been first unwell, he experienced a similar violent attack, but that it went off rather sud-

denly and unexpectedly, when he became entirely free from pain. He then handed me this calculus [showing one,] which he said he had passed with his water the morning after. It is a true mulberry, and of such a roughened and spiculated character, that blood (and it was that which the microscope detected) must have been inevitably drawn, by its forced passage along the narrow tube of the ureter. Here, the microscope not only ascertained the actual presence of a stone, but by determining its nature and composition indicated the treatment applicable to the removal of the diathesis which generated it, and the consequent prevention of the growth of such another — an accuracy and value of diagnosis unattainable, I believe, by any other known means.

Lithotomy, invented for the relief of pains more cruel, according to the expression of Lomius, than any left for mankind in the box of Pandora, is one of those operations the longest known. *Æsculapins* practised it; but *Hippocrates* made his disciples swear that they would not perform it, no one knows why, but most probably because he thought it too difficult for them. Physicians say, because he was a physician. By the way, I may be here permitted to observe, touching the relative rank of surgery and physic, that — as far, at least, as regards primogeniture — the latter must give way to the former, as *Æsculapins*, the God of Surgery, lived upwards of seven hundred years before the time of *Hippocrates*, the acknowledged deity of medicine. The history of this operation, of the different modes of performing it, of the innumerable instruments invented for it, and of the rivalry among its practitioners in different ages and countries, is exceedingly curious and interesting, but is a subject unsuited for the present occasion.

Lithotomy, on the other hand, is an operation so completely of our own days, that few of the latest dictionaries in surgery do more than mention its name. It has sprung, phoenix-like, into perfection, and stands now forth triumphant over disease. The operation of lithotomy has always, hitherto, ranked as the chef-d'œuvre of surgery; lithotomy, where it suits, takes from it the palm. A monk of the name of Citeau, and a Major Martin, broke down calculi in their own bladders — the first, by means of a tube, or canula, and a steel rod, on which he struck with a hammer, as a statuary strikes his chisel; the second, by means of a file, introduced likewise through a canula; and the stones thus broken down were discharged, piecemeal, with the urine. These two operations, performed, long ago, at the dictation of painful suffering and ingenuity, are the prototypes of the *hammer* of Heurteloup, and the drill of Civiale, the inventors and the practitioners of which are still the living ornaments of this age of improvement. The talents of my friend, Mr. Francis L'Estrange, displayed themselves in some ingenious and highly important improvements in the *brisé-pierre*, or crushing

lithotrite. [Here Dr. Houston exhibited several of the most remarkable instruments, both for lithotomy and lithotritry, and also a very ingenious one, which he said was invented by Leonard Trant, Esq., for the removal of calculi from the urethra.]

While speaking of the services rendered to surgery by others, I may be permitted to mention at least one or two of those which it has been my own good fortune to contribute. The term *intestinum rectum*, as applied to the lower bowel, I have shown to be a misnomer, leading to incorrect notions regarding its form, and giving rise to most serious errors both in the diagnosis and treatment of some of its diseases. I have demonstrated, in a manner to have satisfied the best anatomists, that the cavity of the rectum, so far from being straight, is formed into several lodges, by projections from its inner walls of very considerable breadth and thickness. These projections I have proved to be of such a nature, as not only to obstruct the passage of bougies introduced with a view of sounding the canal, but to be themselves liable to be mistaken for strictures of the bowel. [For a plate of them, see 'Dublin Hospital Reports,' vol. 5.] And this is no supposititious case, for in what other light than a mistake can we regard the printed statements of one of the most approved authors on diseases of the rectum, when he gravely tells us that "more than once has he known the mother and daughters, the father and sons, to be subject to this disease." the fact all the while being that stricture of the rectum is, in reality, so rare an affection, that not more than half a dozen examples of it can be found in all the museums in Dublin; and that such a catastrophe as that of thrusting the rude bougie through one of these valves, in mistake for stricture, has in reality occurred, I could, if necessary, give several melancholy proofs. But I believe that such malpractices are greatly on the wane; as an exposition of the true form and disposition of the rectum has not only led to greater accuracy of diagnosis on the part of the qualified practitioner, but has cowed down the empiric, and taken away his best excuse for persistence in his half-ignorant, half-knavish impositions.

As a remedy for internal bleeding hemorrhoids (*vascular tumours of the rectum*), I believe that in recommending the application of the strong *nitric acid* I have rendered a service of no mean amount. Several cases treated in this way may be found in the *Dublin Medical Journal*, and I have permission from Sir Philip Crampton to give publicity to another such, regarding which he has politely sent me the following note:—

"DEAR HOUSTON, — You will be pleased to hear that I operated, about a fortnight since, on Mrs. —, for the bleeding raspberry excrescence of the rectum, exactly in the manner recommended by you, and that she is now quite well. The disease was of long standing, and

her constitution was much reduced by excessive losses of blood. There were three excrescences, each about the size of the thumb-nail; and as they were but slightly raised above the level of the mucous membrane, I considered them to be far better subjects for your operation than for the ligature.

"Faithfully yours,

"PHILIP CRAMPTON.

"Nov. 12, 1844."

The improvements effected of late years in the diagnosis and treatment of *syphilitic diseases*, are most important and satisfactory. Syphilis, when first introduced into Europe, three hundred and fifty years ago, raged like a pestilence. The world was paralyzed with terror at the mortality which attended it, as, when once it got into a family, the innocent equally with the guilty were in danger of becoming its victims. So great was the terror with which the Parisians regarded the disease, that, by a decree of parliament, dated the 6th of March, 1497, all persons infected with it were ordered, if strangers, to quit the city; if possessed of a home, to shut themselves up there, so as to be seen by no one; or if citizens, without any fixed place of abode, to repair to St. Germain des-près, where lazaret-houses were provided for them, and that within twenty-four hours from the date of the order, under penalty of death. In the month of September, in the same year, a proclamation was issued by King James the Fourth, in Edinburgh, commanding all persons so affected to repair, before sunset on the next day, to the shore at Leith, where they would find boats provided, ready to transport them to the island of Inch, there to remain until cured; and what was still a harder case, the very surgeons who took charge of such patients were doomed to the same banishment — all equally under penalty of being burned in the cheek with a branding iron. The disease has at the present day lost much of its malignancy, and although some persons die of it, such a result is not common. The difference is explained by some on the supposition of the poison being at its highest state of malignancy in its first appearance, and now naturally grown milder. This is probably true, in some measure; but it is still more due to the prompt succour afforded to the afflicted, and to the perfection to which the treatment has been brought; for it is a fact, that wherever the science of medicine is most cultivated, there syphilitic diseases are the least virulent.

Mercury, the great antidote to the poison

of syphilis, has undergone remarkable changes in public estimation. It was not the mere discovery of the antidotal properties of this medicine that effected the good, as mercury in ignorant hands is to this day more likely to be prejudicial than serviceable in the treatment of syphilis. But it was in virtue of the results arrived at after a pains-taking observation of its effects; for good or evil, that that accurate knowledge has been arrived at which enables us to employ it with so much potency as a remedy. Paracelsus was the first, in his *Magna Chirurgia*, to recommend the systematic use of mercury internally. But from his day, until comparatively lately, practitioners had no fixed principles regarding it to guide them. Some, and that even within my own memory, judged of its efficacy by the quantity of saliva which it caused to flow out of the mouth in a given time — so many pints a day for example; others, by the amount of the medicine taken into the system; some, again, failing to distinguish the ill effects of the remedy from the disease itself, pressed the medicine to a most prejudicial and dangerous length, thinking that, in the end, the disorder must give way to its specific influence, while, in fact, one disease was only added to another. Others, not discriminating between affections of a simple and those of a specific nature, have dosed equally with an unsparing hand, as well those who had been better without, as those who stood in need of the mercury; and, lastly, others, observing such bad effects from this empirical mode of administering it, and which they did not know how to obviate, abandoned the medicine altogether, and had recourse to vegetable remedies in its stead. Combinations of the ill effects of irregular mercurialization with uncured syphilis stand among the most intractable of diseases; and fortunately, under the present improved system of treatment, such are seldom now to be witnessed. Here, however, are a few specimens from our museum, of the cranial bones of some unfortunate patients of bygone days, showing the marks of the *corona veneris*, and of some of the other evils in the form of caries, of which I am speaking. In the museum of the College of Surgeons a number of specimens of this kind are stored up, such as certain future museums will never find matches for. These I have described in detail in my published *catalogue* of that collection.

The great superiority of the surgeon of
VOL. III.—14

the present day lies in his skill in distinguishing the true syphilis from simple sores, and in applying to it, and to it alone, the appropriate and necessary remedies. A discrimination between syphilis and simple primary sores was rarely, in former days, attempted. All sores in genital regions were treated with suspicion — *in dubiis suspice tuum* being the motto — and terrible injury to the health, and injustice to the character, of individuals was frequently the result. But under our present improved state of knowledge, the well-informed surgeon will never commit such errors. Whenever he determines that mercury is necessary, he knows exactly the time for the administration of the remedy, the symptoms which betoken its salutary effects, the length of time that it should be persevered in, and if it disagrees, how to remedy the evil. He can bring out, in short, every beneficial influence of the medicine on the disease with the utmost exactitude, and, at the same time, steer his patient in safety past all its quicksands and dangers. This, I say, is one of the many illustrations which I have to offer of the high state of perfection of modern surgery; and I feel proud in adding, that the labours of our distinguished compatriots, Mr. Carmichael, Mr. Colles, Mr. Hewson, and Mr. Wallace, have largely contributed to such a result. I believe I am safe in saying, that to Mr. Carmichael, in particular, mankind owes a larger debt of gratitude than to any other individual, for the turn which his investigations and writings have given to the treatment of venereal diseases, and for the salutary check put by them to that wholesale and indiscriminate abuse of mercury which disgraced the medical practice of the last century.

Still farther, as regards this subject, a new and additional remedy has been of late discovered, of incalculable value; one which, however, although not, perhaps, like the mercury, a genuine antidote, nevertheless harmonizes and dovetails with that medicine in a most beneficial manner — being of service at the moment when the mercury should be stopped; acting kindly and well, sometimes, when the mercury disagrees; and often, when given at the same time and in combination with that medicine, producing its own good effects while promoting those of the mercury. I allude to the *hydriodate of potash*. Bark, and mineral acids, sarsaparilla, &c., are often given at the same time, and act variously in keeping up and improving the

general health while the poison is being neutralized and eliminated from the system. With these remedies in hand, the well-informed practitioner can, with confidence, promise a safe and satisfactory issue in almost every case. And, after such assurances, if the public continue to place their ailments and their lives in the hands of the mercenary quack — the man to whom all that I have told you, and everything else on the subject, is unknown — it may truly be said of them, that, in the midst of light, they prefer walking in darkness; that, disregarding the proffered benefits of the accumulated experience of ages, they voluntarily throw themselves back into the condition of danger of those who were banished, by royal ordinances, to desert islands, in company with medical attendants very little better informed than themselves.

A nation's gratitude is due to the medical gentlemen of modern days for the light which their researches have thrown on the subject of *syphilis during intra-uterine life*. It has been discovered that the presence of an occult taint of long-bygone syphilis is prone to be kindled up afresh in the offspring, receiving, as it were, fresh venom, by the new birth, and re-assuming, in the new being, almost all its pristine virulence. Such an infant rarely sees the light of day alive; or, if it do, it is only to propagate to its nurse or others one of the worst forms of syphilis. This is, with a vengeance, visiting the sins of the fathers upon the children. Now, the surgeon has not only traced all this evil to its source, but discovered for it a remedy. And here it may be truly said, that his saving hand reaches even to the unborn, staying the course of death, and arresting the spread of evil. A case of this kind, of no uncommon occurrence is the following:—A gentleman marries; he believes himself, and every one else thinks him to be, in the best of health; his virtuous wife is equally so; and every prospect of happiness is open to them. In due time, perhaps prematurely, a child is born, but it is not half thriven; it has the shrivelled skin of old age; it cries continually with a squeaking voice; and is, perhaps, spotted with some eruption. It lingers for a few weeks, or months, pining away daily, instead of adding to its growth, and dies, at last, a miserable object. Well, better hopes are entertained for the next time, and the utmost anxiety exists as the period of birth of a second infant approaches, in the hope that it may be, unlike the first, perfect and healthy;

but such joyous anticipations are again doomed to be blighted, for the infant, when born, worse, perhaps, than its predecessor, may be dead, putrid, and offensive. [Drawings.] Again and again are these disappointed hopes submitted to, and these painful scenes of premature death enacted, the parents themselves all the while continuing in apparent good health. A medical gentleman, properly informed on such matters, is, at length, consulted. He questions the father respecting his past history. He finds, on a special inquiry into the point, that the gentleman, at one time, had some venereal affection, but long before his marriage, and under such circumstances that he had supposed himself perfectly cured of it. But the acknowledgment is sufficient to confirm his attendant in a well-grounded suspicion, that syphilis is at the root of the evil; and full of the confidence which learning and past experience gives, he administers, at the proper time, and with care and judgment, the appropriate remedies to both the parents, who now both require them; after which, the succeeding offspring are delivered into the world, full-grown and healthy — sources of great joy to their parents, and living evidences of the improved state of modern surgery; — I say modern surgery, because the discovery of the connexion of such mortality in new-born infants with syphilis, together with the proper application of the remedy, almost dates within the limits of the last half-century. The "Treatise on Syphilis," by Dr. Colles, contains a chapter on this subject, full of observations of high import and originality.

Gentlemen, — time will not permit me to speak of several other facts which it was my intention to have introduced to your notice — especially some brought to light by the microscope, and which promise to be of great value in practice; such, for example, as the curious and interesting discovery of Mr. Liston as to the presence of spermatozoa in the fluid of some hydroceles: that of M. Gruby, and Dr. Hughes Bennett, regarding the vegetable parasitical nature of certain cutaneous eruptions; and, above all, the novel and important light shed on the pathology of cancer by the histological researches of Valentin, Gluge, and Müller. I trust, however, that what I have said may be sufficient for the object aimed at in this lecture — namely, that of apprising you of the extent, importance, and difficulty of the profession in which you are embarked, and of inciting you to the necessary energy in its prosecution.

THE LIQUEFACTION AND SOLIDIFICATION OF GASES.

Dr. Faraday brought forward this subject at the Royal Institution, at the Friday evening Lecture, Jan. 21. He prefaced his lecture with the explanation that, as Fulle-rian Professor, he had been, by the founder of that professorship, exempted from many of its duties, on the ground of his being engaged in purely scientific research. The present was a case of purely scientific discovery. Professor Liebig had lately written to him the remark that, in his recent visit to England, he had observed that practical matters alone excited interest there; whereas in Germany, purely scientific questions are regarded. These are, indeed, the true sources whence all practical improvements flow, but perhaps the right path would be a happy medium. Dr. Faraday assured his audience that he was desirous of pursuing that better path; and he hoped that, since his last lecture was on a matter purely practical, he might be excused for bringing before the meeting a subject purely scientific.

So long ago as the year 1823, he had been engaged in an endeavour to reduce gases into a fluid state; the means he employed had been to generate the gases in a confined space, and the result had been that he succeeded with the nine following: Chlorine, hydrochloric acid, sulphurous acid, sulphuretted hydrogen, carbonic acid, euchlorine, nitrous oxide, cyanogen, and ammonia. Since that period the subject has been pursued by others, and a variety of means have been devised to reduce gases to the state of fluid, and further, to solidify some of them. Thus cyanogen and carbonic acid have been rendered solid, and arseniuretted hydrogen, fluid. The means of rendering carbonic acid solid, which may be regarded as the type of the others, as is well known, was devised by Thilorier; and by availing himself of the great cold produced by solid carbonic acid when mixed with ether, together with the air-pump to render the evaporation more rapid, Dr. Faraday has succeeded in reducing to a fluid state the six following gases.—Olfiant gas, phosphuretted hydrogen, hydriodic acid, hydrobromic acid, fluoboron, and fluosilicon, and of rendering solid, sulphurous acid, sulphuretted hydrogen, euchlorine, nitrous oxide, hydriodic acid, and hydrobromic acid.

The method of proceeding, and the principles upon which it is based, are as follow:

The freezing point of mercury is—40° of carbonic acid,—70°; the cold produced by mixing solid carbonic acid and ether,—105°. By placing the latter under the air-pump the temperature may be reduced to—160°; and Dr. Faraday conceives that by using solid nitrous oxide, instead of carbonic acid, a temperature far lower may be obtained, and by its means, combined with a very high degree of pressure, he thinks oxygen, hydrogen, and nitrogen, will certainly be reduced to the fluid or solid state. In fact, he had rendered oxygen fluid, but the enormous pressure had caused the gas to escape through the substance of the metallic stoppers used to close the glass tubes in which the gas was confined. Dr. Faraday had found that common flint glass was quite inadequate to the purpose, and had substituted green-bottle glass for it, with perfect success. Tubes made of this glass will bear enormous pressure, and if they give way they do not fly into pieces, but rend open in a vertical direction, so as to do no mischief. By connecting a reservoir of gas with a long metallic tube, at the end of which is attached a bent tube of glass, passing into a bath of solid carbonic acid and ether, under the receiver of an air-pump, and by means of a force-pump pressing into this tube the gas with a force equal to about forty or fifty atmospheres, it becomes fluid or solid in the glass tube, which may then be removed and sealed. It is thus, by combining great pressure with the lowest possible degree of cold, that gaseous bodies are reduced to a solid or liquid state; and Dr. Faraday hopes ere long to decide in this way the disputed questions as to the metallic or non-metallic characters of hydrogen and nitrogen.

Some of the results already obtained are highly curious and important in a scientific point of view; thus ammonia in a solid form is a crystalline white substance, heavier than liquid ammonia, and almost inodorous. Oxide of chlorine is a beautiful orange-red crystalline substance. Alcohol becomes thick and viscid, like cold oil, but does not crystallize; and so with caoutchouc, oil of turpentine, &c.—*Chemical Gazette.*

PROFESSOR MULDER ON FERMENTATION AND THE NATURE OF YEAST.

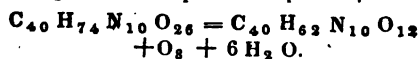
When sugar ferments at a moderate temperature (from 59° to 77° Fahrenheit) alcohol and carbonic acid always result; many saccharine juices, such as those of ripe fruit,

of the beet-root, of the carrot, and of the onion, behave in the same manner; but if they are allowed to ferment at from 95° to 105°, entirely different products are formed. The albumen and gluten of the juices are destroyed, and the entire amount of nitrogen is contained in the liquid as ammonia; while under this altered influence of heat, lactic acid, mannite, and a substance resembling gum, originate from the sugar, instead of the carbonic acid and alcohol: there is at the same time a disengagement of gas. It is evident, therefore, that the metamorphosis of the sugar depends entirely on the state of the gluten and albumen of the vegetable juices, both of which in alcoholic fermentation are converted into the principal constituent of the ferment, which, when it undergoes a decomposition other than the usual one, yields entirely new products, having not the least resemblance with those resulting from alcoholic fermentation. It evidently results from this that the general notion of a motion of the molecules does not suffice to explain the formation of carbonic acid and alcohol from sugar, but that the motion must be a peculiar one, in fact, one which communicates itself to the molecules in one direction and no other.

The most simple alteration of the ferment is alone sufficient to produce vinous fermentation. This consists, in the first place, in the formation of acetic acid, followed by a subsequent disengagement of carbonic acid, and probably cotemporaneous formation of ammonia. If anything is opposed to that change, the ferment no longer possesses the power of causing fermentation or of supporting it. High drying, corrosive sublimate, nitrate of silver, creosote, &c., destroy it. Yeast is indeed only capable of producing fermentation, or at least of exciting it, in the presence of oxygen or atmospheric air; when these are wholly excluded no fermentation takes place.

A variety of strange ideas have been entertained respecting the nature of yeast; recent experiments have convinced me that it undoubtedly is a cellular plant consisting of isolated cells. The plants are vesicles of a substance which approximates in its properties and composition to cellulose, but differs from it in many respects. Its composition is $C_{12} H_{20} O_{10}$. It is insoluble in cold and boiling water, yields no xyloidine with nitric acid, is rapidly converted by muriatic acid into humic acid, and dissolves readily in a concentrated solution of caustic potash in the cold. Its composition can by no means be reduced to that of cellulose = $C_{24} H_{42} O_{21}$.

Each vesicle encloses a proteine body, which is insoluble in boiling alcohol, is consequently not gluten, is very readily dissolved by acetic acid, consequently is not albumen, and which is so easily altered by boiling water that it may be regarded as a superoxide of proteine,



The proteine is, moreover, contained in such a state in the vesicles, that its composition approaches to that of fibrine, albumen, and caseine. Extracted with acetic acid and precipitated with carbonate of ammonia, it has an analogous composition to the above bodies, — viz., 54.35 C, 7.04 H, 16.03 N, 22.58 O.

These vesicles, consisting of substance resembling that of cells, do not contribute in the least to the fermentation, but are exosmotically penetrated during fermentation by the proteine compound; they become smaller, contract, and remain at the close of the operation in the state of shrivelled globules. The proteine compound, which has made its way out, and is characterized by being most readily decomposed at a certain temperature, immediately undergoes decomposition, and leaves nothing behind but ammonia and a small quantity of an extractive substance not yet accurately examined:—

| | C. | H. | N. | O. |
|----------|----------|----------|----|----------|
| Proteine | 40 | 62 | 10 | 12 |
| Ammonia | | 30. | 10 | |
| | C_{40} | H_{32} | | O_{12} |

The first cause of the phenomenon of fermentation is therefore due to heat. Just as several bodies — for instance, the hydrated oxide of copper — are decomposed at a certain temperature under water, there is likewise for the proteine compound of yeast, — a very complex substance, — a temperature at which it can no longer exist in solution. The decomposition extends to the sugar, which is converted into carbonic acid and alcohol. During this process, especially at the commencement, a small quantity of oxygen is absorbed; this absorption, however, is by no means the cause, but rather the first consequence of the decomposition of the proteine compound.

What has been said respecting the principal constituent of yeast is likewise applicable to the yeast itself, only that the cellular membranes of the yeast-globules have no influence at all on the fermentation, but are rather mere bearers of the proteine compound, and after fermentation, remain behind as insoluble substances. — Mulder, *Versuch einer allgem. physiologischen Chemie*, 1844. — *Idem*.

NEW TREATMENT OF HYDROCELE, ENCYSTED TUMOURS, AND FISTULA.

Dr. Alfred Augustus Harvey, M.R.C.S.E.,

and formerly surgeon in the Hon. East India Company's service, has forwarded to us for publication, the following account of the mode of procuring a radical cure for Hydrocele, without injection, employed by him, at intervals, for thirty years, successfully:—First, discharge the fluid with a trocar, or pocket lancet, and then apply a warm vinegar poultice all over the scrotum, in order to bring on inflammation, which generally takes place in a few hours, and becomes painful. When sufficient inflammation has been excited, remove the vinegar poultice, and apply a bread-and-milk poultice. In a short time, the pain and inflammation generally subside, and the cure is completed. Give a few smart doses of purgative medicine. Dr. Harvey adds the subjoined:—

"Cure for Encysted Tumours, or Wens of the Head, or other parts of the body, without cutting them out."—First, make a longitudinal cut along the scalp. This is performed with little loss of blood. Next press out the contents of the cyst, and apply, freely, alcohol in the cavity, with a camel's hair brush. Then place in the cavity, also, from two to six grains of nitrate of silver, and bring the edges together with strappings, when inflammation takes place. Should it inflame too much, apply cold-water dressings, and give a few doses of active purgative medicine. This plan has ever been found to complete the cure in a few days.

Fistula in ano (blind external) can often be cured without cutting, by injecting alcohol the whole length of the sinus, three or four times a-day, until it brings on inflammation; when that takes place, the cure is generally completed in a short time. In full habits, bleeding by the arm should be practised, if required, and the bowels opened pretty freely, before the alcohol is injected. Should the inflammation become too severe, it should be regulated by poultice or cold-water dressings, and low diet should strictly be attended to. — *Lancet*.

TREATMENT OF FISTULA.

To the Editor of the *Lancet*.

Sir, — The last number of your valuable journal contains a brief report of some cases of fistula treated by ligature. It is not my intention to enter upon the comparative merits of this plan with those of the operation by incision, although the inapplicability and insufficiency, as well as in many cases the protracted pain and hazard which

accompany the former, must have been observed by every practical surgeon, neither do I wish to disparage the ingenious method by which the general use of (as I think) a deservedly obsolete practice is sought to be revived. My purpose in addressing you is to dissent from the opinion that the operation by incision is attended with any unusual danger, more especially hemorrhage. The extensive experience of nearly twenty years, enables me conscientiously, and unreservedly, to affirm the reverse is the fact; in proof of which it is merely necessary to mention, that in two hundred and forty-eight cases, selected promiscuously, which were operated upon at the Fistula Infirmary in the manner I have for some years adopted, no fatal hemorrhage occurred; and further, out of that large number, in twenty instances only was there any bleeding requiring attention. Many of these operations were witnessed by professional friends, who concurred in expressing their approbation of the simplicity, efficacy, and safety of the plan. Before concluding, I would add, that if the division of vessels of any size is requisite (by no means a common occurrence), no serious consequence can ensue if the simplest precaution be observed.

Respectfully requesting the insertion of these few remarks, I beg to subscribe, your obedient servant,

FREDERICK SALMON.

CASE OF PROTRACTED UTERINE HEMORRHAGE, WITH SECTIO CADAVERIS.*

By WM. HINDS, Esq., Surgeon, Birmingham.

The following case of death from protracted hemorrhage appears to me sufficiently interesting and instructive to warrant diffusion.

Some of the particulars of the case are obligingly furnished me by the experienced gentlemen who attended the patient from the commencement.

Mrs. T —, aged thirty-two, after a labour of about an hour's duration, was delivered on the 9th of July last. Considerable hemorrhage occurred after delivery, but it was checked in no very long time, and without much difficulty. For the first two or three days nothing unusual occurred to excite apprehension, although the patient was subjected to mental disturbance, arising from causes of a domestic nature. Up to the fifth or sixth day there had been no appearance of external hemorrhage, but after this period occasional faintings occurred, together with prostration, and a slight sanguineous discharge, and on the seventh or eighth day she

* *Lancet*.

passed coagula. The prostration of strength continued to increase, and on the nineteenth, ten days after delivery, I was called to see her, in consultation with the gentleman before alluded to, when I found her in the following state:—She was lying on the back, with little or no power to move even a limb. The lips and cheeks were blanched, and the features exhibited signs of great collapse. She was unable to articulate audibly, and each syllable was separated by an inspiration. The tongue could be protruded only a very little way, and, with the gums, appeared also exsanguine. The pulse approached 140, very small and weak. She had, moreover, fetid vaginal discharges. On placing my hand over the hypogastric region I could distinctly feel the uterus much distended, the fundus forming a large softish tumour, which reached considerably above the brim of the pelvis. There was some little abdominal tenderness. I learned that on the morning preceding my visit she had passed more coagula. Some of these were manifestly putrescent, and on examining them closely I thought I could discover what appeared to be small portions of placenta, in the same state of decomposition. On observing this, I suggested to the gentleman present, that as the hemorrhage had been evidently going on internally for many days, and as there must have been originally an obstacle to the effectual contraction of the uterus, which did not appear to have consisted in mere want of power in the organ, it was by no means improbable that the obstacle consisted of a portion of retained placenta. I was, however, assured by him that the placenta was expelled without the slightest evidence of its having been morbidly adherent; that it was large, however: that its texture was consistent; and, moreover, that he had made a careful examination of it at the time, and did not observe that any part of it was deficient.

The indications in this case appeared manifest. In the first place, it was necessary that the distended uterus should be emptied of its contents, with the view of suppressing the internal hemorrhage, and thereby saving the case from a fatal issue, to which it was rapidly advancing. A vaginal examination was made, and a few fragments of membrane and small coagula were extracted; but from the contracted state of the os uteri it was evident that the complete introduction of the hand into the uterus, with the view of removing its contents, would be a highly painful operation at least. It might possibly have been found impracticable at this stage of her delivery, and even if practicable it might have been attended with so much irritation of the uterus as to have been followed by inflammation of the organ. Moreover, in the state of complete exhaustion under which the patient was labouring, it might at once have been fatal. We determined, therefore, to wait until the next day, and in the meantime to apply a tight bandage round the abdomen, to use vaginal injections in order to destroy the

factor, to administer small doses of the ergot of rye, and to stimulate.

On the following day we found our patient somewhat better, though still in an exhausted condition. She had passed more coagula during the night. The uterus, however, was still much distended, and evidently almost powerless; but the friends of the patient, seeing the slight apparent improvement, were averse to any attempt on our part at the introduction of the hand into the uterus, an expedient which, as it might have been found impracticable, or been followed by untoward consequences, was not urged. We resolved, therefore, to pursue the same plan as adopted on the previous day, only to give somewhat larger doses of the ergot of rye, with considerable intervals between each three or four doses. Under this plan of treatment there certainly was a marked improvement, apparently, in the course of a day or two afterwards, when I took my leave of the case; moreover, the uterus was not to be felt, having receded into the cavity of the pelvis.

The patient, I understand, was afterwards seen by several medical men, one of whom, I believe, predicted the finding of a uterine tumour. During the next ten days she continued to pass small portions of coagula, and also to have fetid discharges, the abdominal tenderness increasing. There were also occasional revivals, with alternate sinking, until the 10th of August, when she died; a month and one day from the period of delivery.

On a *post-mortem* examination, the uterus was found to contain a small portion of placenta firmly adherent to its sides, and near to the fundus. But it then contained no coagula, and was contracted to pretty nearly its natural dimensions in the unimpregnated state. It was ascertained that this woman had had one or more falls during pregnancy, which will readily account for the effused blood or lymph constituting the medium of adhesion.

Two important questions present themselves for consideration in this case—namely, What was the immediate cause of death?—and, What mode of treatment would have been most likely to secure a favourable issue?

There is little difficulty, with regard to the first question, in concluding that death was the result of a mixture of anemia and asthenia. There had most likely been hemorrhage internally, more or less, from the time of delivery, caused, no doubt, by the retained and morbidly adherent portion of placenta; and perhaps increased through the influence of the mental agitation to which the patient had been subjected. The loss of blood, therefore, must have been very considerable during the first ten days, although not sufficient to produce a fatal anemia. Afterwards, however, the loss of blood must have been much less considerable in quantity, except in reference to the then extremely depressed condition of the system. But

in such states, it is well known that the loss of even small quantities of blood may determine the question of life and death. The uterus was found empty; and there had been no discharge of fluid blood immediately previous to death, therefore the depressed condition of the nervous system would have a large share in the fatal issue. This tendency to the depression of the vital powers — to *asthenia* — would be materially augmented by the absorption of the putrid effluvia arising from the decomposition of the uterine contents; while to the same cause it is reasonable to ascribe, in part, at least, the abdominal tenderness.

Supposing this to be a probable estimate of the cause of death, we may briefly consider the treatment that would have been most likely to prove advantageous. Now the cause of death being made up of two concurrent influences, which yet differed essentially from each other, it is by no means improbable that if one of those influences could have been arrested in its progress, the other might have been overcome by the resources of nature, aided by medical expedients. The exhibition of the ergot of rye, in the first instance, was doubtless, under the circumstances, a well-advised plan, though the propriety of continuing its administration, although followed at first by some good effects, is not so clear. It proved unequal to the task of emptying the uterus of the coagulated blood, and might possibly contribute in some degree to the depression of the vital powers. I am disposed, therefore, to believe that in desperate cases of this nature, and after making a full trial, perhaps of cold or astringent injections, when not contra-indicated by severe prostration of the vital powers, it would be justifiable, even at the risk of severe irritation to the uterus, to make every possible effort at the introduction of the hand, and thereby to free the organ at once from its contents; for, in the language of Burns, "no remedy can be depended on without the use of the hand and the removal of coagula." In a great majority of cases, this object being effected, I am persuaded that a complete check would be put on the stillicidium of blood, and the patient's life thereby be saved. Not only would the slow bleeding be stopped, but the system would also be freed, to a considerable extent, from the depressing influence on the vital powers, arising from the absorption of the noxious emanations from the decomposing coagula. The portion of retained placenta, the original cause of the hemorrhage, even if it were still so adherent as not to admit of extraction, would nevertheless have become much reduced in size by the putrefactive process. The subsequent part of the treatment would be sufficiently simple. The strength of the patient would require to be supported by means of nourishing food, and perhaps by opium or quinine; and it would be necessary to prevent, as far as possible, the absorption of the products of the decomposition, which must still go on, of the remaining portion

of placenta, by means of injections into the uterus, composed of chloride of lime or other disinfecting agents, and thereby shield the system from the injurious consequences which those products would otherwise induce.

METHOD OF ASCERTAINING BEFORE ACCOUCHEMENT WHETHER THE MOTHER WILL HAVE SUFFICIENT MILK.

"Donné brings forward the following propositions with the greatest confidence in their truth, and after having tested them by a very considerable experience.

"Pregnant women, considered in the relation of the secretion of colostrum, during the last months of gestation, may be distributed into three classes: —

"1st. Those in whom this secretion is, so to say, absent, and from whom it is impossible to obtain, by a regulated pressure, more than a drop, or half a drop of a liquid presenting to the microscope some few milky globules, with granular bodies swimming in a troubled or viscid liquid.

"2d. Those in whom the secretion is more abundant, and from whom there can be drawn with facility a fourth or half-glass of colostrum, offering the following characters to the microscope: milky globules few, and of a middle size, or numerous and very small; these globules, sometimes badly formed, swim in a liquid of little density; they are mixed with a certain number of granular bodies, and sometimes we find at the same time mucous globules.

"3d. The third class comprehends those women in whom the secretion of the mammary gland is not only abundant, but in whom it is also rich in globules of a good size, being, for the most part, 1-100th to 1-30th of a millimetre, or even more, in diameter; they are well-formed, and nearly as regular as in perfect milk: it presents, likewise, the oily drops, granular bodies, &c., of the colostrum.

"Now, if the first kind of colostrum exist before birth, you may be sure that the milk subsequently will be serous, poor, and insufficient for the nourishment of the child. In the second category, also, the milk, after accouchement, may be very abundant, but it will be poor and serous. The third kind of colostrum, however, indicates always a milk equally rich and abundant in quantity." — *Dub. Jour.*

ON THE ACTION OF DIGITALIS AND ITS USES IN DISEASES OF THE HEART.

By Wm. Monk, M.D.

(Guy's Hospital Reports, October, 1844.)

This practical paper is founded upon upwards of 400 observations, which were made during five years of dispensary practice. The tincture has been found the most successful form of preparation as regards the effect produced upon the action of the heart, while the infusion is incomparably superior as a diuretic; and, from want of attention to this distinction, discrepant opinions as to the utility of the medicine have doubtless arisen. The powder, used alone, Dr. Monk considers as worthless, and although in combination (with mercury and squill) it forms a valuable diuretic, it cannot be so employed as a sedative.

The action of digitalis upon the heart is manifested in two ways: by the exertion of a depressing influence, and as an antispasmodic. Hypertrophy of the organ, whether simple or complicated with other disease, causing increased impulse, may be benefited by the depressing influence of digitalis, which is best obtained by giving the uncombined tincture, in tolerably full doses, at intervals of eight, ten, or twelve hours. The antispasmodic influence, acting so beneficially in the irritable condition of the heart manifested by palpitations, irregularity, &c., is that which is usually sought from digitalis. Dr. Monk does not agree with those writers who state the action of the digitalis upon the heart to be uncertain. Its operation is as certain, in properly-selected cases, as that of other medicines, and may be maintained with safety.

There are, however, circumstances under which this medicine cannot be exhibited usefully or safely. Thus, in a plethoric state of the system, its employment must be deferred until bloodletting or other evacuates, for which it is no substitute, have played their parts. An inflammatory, or sub-inflammatory condition of the gastric and intestinal mucus membrane, seems to prevent the action of digitalis upon the heart; and increased irritation results if it be persisted in. Such complication of lesion of the heart and gastric derangement is by no means rare, and in such cases prussic acid is the appropriate medicine. Quietude of mind and body much favour the action of digitalis. The recumbent posture is very adjuvatory to its depressed action; and Dr. Lombard truly observes, that it is rarely efficacious in those who take much exercise, or whose attention is much occupied during its use. Dr. Monk gives ℞.x. ad xxx. every eight, ten, or twelve hours, and is rarely disappointed. He does not reduce the pulse, which is to be carefully watched, below 60 in the adult, and thus derives the beneficial without risking the production of the dangerous effects.

Digitalis rarely acts as a diuretic when its influence upon the heart is marked, and vice versa.

The author quite concurs in the high opinion Withering entertained of its power of increasing the flow of urine, which is seldom accomplished by any other drug after its failure. It is not to the robust, florid, or wiry-pulsed, but to the enfeebled, shattered, condition of the system that digitalis is applicable. "If the pulse be feeble or intermitting, the countenance pale, the lips livid, the skin cold, the swollen belly soft and fluctuating, or the anasarcaous limbs readily pitting on pressure, we may expect the diuretic effects to follow in a kindly manner. These remarks were penned, it is true, in reference to dropsy, from whatever cause arising; but *mutatis mutandis*, they are equally applicable to all cases in which the diuretic operation of foxglove is required. In disease of the heart, a diuresis is frequently a valuable means of preventing effusions by diminishing congestion, or of producing their absorption if they have already occurred; but whether digitalis be the appropriate remedy or not, depends in chief upon whether a sthenic or asthenic condition of the system prevail. Thus in the case of hypertrophy, it is seldom appropriate, while in dilatation it is usually the best of diuretics. Valvular disease is that in which digitalis proves most useful, except in cases in which this is complicated with hypertrophy. The infusion is to be given in doses of ʒss. to ʒj. every six or eight hours. With a view of preventing the sedative operation of the drug, moderate exercise, short of diaphoresis, should when possible be taken. A moderate quantity of drink may be given, and the loins must be covered with a double roll of flannel, or, as recommended by Lombard, a stimulating plaster may be applied to them.

Dr. Monk believes that untoward and fatal effects, resulting from the continued employment of this medicine, are "exceedingly rare;" and cites the opinions of Drs. Holland and Pereira as confirmatory of his own.

"It has only occurred to me to see the slightest and less portentous of these symptoms as a consequence of foxglove; such as, inequality or intermittence of the pulse, loss of appetite, and frontal headache: either or all of which have at once subsided on discontinuing the medicine. I believe that such symptoms will only occur when the drug fails to act in a normal manner as a sedative or a diuretic. If either of these effects are once obtained in a kindly manner, I then consider my patient safe from the poisonous operation of the drug. If on the contrary, it does not evidence its usual effects within a few days, the medicine, I believe, accumulates in the system, and the patient is in danger of experiencing its poisonous influence. I am therefore in the habit of prescribing it for a week: and, if within that period, I perceive neither sedative or diuretic effects, I then invariably desist from its administration. Let these effects, however, be once kindly induced, and the medicine may then be continued with safety for a considerable period. In no one

instance have I seen a bad effect follow the use of digitalis where the first consequences of its exhibition were the removal or material alleviation of prominent or distressing cardiac symptoms, whether this has been brought about by its operation as a sedative or as a diuretic." 310. — *Med. Chir. Rev.*

INFLAMMATION OF THE LIVER.

To the Editor of the Medical Gazette.

Sir, — Should the following case of inflammation of the convex surface of the liver, attended by a distinct physical sign, be deemed worthy a place in your valuable journal, its insertion will greatly oblige,

Your obedient servant,

JOHN L. PATTERSON, M.D.

Paraibo, S.A., Aug. 1, 1844.

In the month of May, a free black, residing on a sugar plantation a couple of leagues out of town, came to consult me for various dyspeptic affections, from which his health had been suffering more or less during the antecedent six months. He was diagnosed to have granular disease of the liver, and was treated in accordance with such opinion; and during the next three weeks he said he felt his health rapidly improving. At the end of this time, however, he was obliged to make a journey inland of some 200 miles; and in the course of it was much exposed to the conjoined influences of sun and rain. He felt immediately a renewal of his old complaints, and on his return home, felt himself worse than at any former period. Three days after his return, the following symptom, and for which alone the case is remarkable, made its appearance, and so much alarmed him, that he immediately came to town again to consult me. On placing the hand over the epigastric and the anterior part of the right hypochondriac regions, there was communicated to it a rubbing sensation, similar to that felt over the heart in certain cases of pericarditis, but in the present case much rougher and more distinct. On applying the stethoscope over the same parts, that same creaking-of-new-leather sound was heard as in pericarditis, but much more prolonged, louder, and coarser. Any opinion that might on the instant have suggested itself of the dependence of these symptoms on disease of the heart or the arterial system, a moment's examination was sufficient to dispel, showing them utterly unconnected with these, and dependent on, and synchronous with, the act of respiration; for on the

patient's holding his breath they immediately disappeared.

The diagnosis made was, that there existed inflammation of the convex surface of the liver and its peritoneal investment, accompanied by an exudation of soft coagulable lymph, and that the symptoms above referred to arose from the motion of the diaphragm over such surface. This opinion seemed borne out by the following considerations: — 1st. As already mentioned, on the patient's holding his breath, the symptoms were no longer discoverable. 2dly. They were much more distinct in the erect or sitting posture than in the recumbent; in which last, from the weight of the liver causing it to be more closely applied to the surface of the diaphragm, the motion and play of this vessel over it would be much diminished. And 3dly, the character of the sounds themselves; in inspiration we had a succession of smaller creaking sounds, from the gradual and continuous motion of the diaphragm over the surface of the liver; whereas, on expiration, we had one, or at most two, loud irregular tearing sounds, as if from the sudden lifting of any body out of a viscid gluey substance.

The left lobe of the liver was enlarged and irregular. In ten days the patient again returned, when the rubbing sensation and the sounds were alike almost imperceptible; but the irregularities on the enlarged left lobe existed the same.

I have thought it unnecessary to burden the case with a detail of the other symptoms, or the treatment.

Practising, as I do, in a district in which inflammation of the liver is an occurrence of more than ordinary frequency, I have had an opportunity, since making the above details, of observing the same symptoms, though in a much less marked degree, in another patient affected with acute hepatitis; and I can yet remember of having, in former stethoscopic examinations, been struck with various anomalous sounds in the lower part of the chest, for which I was at the time unable to account, but which I have since thought may be referred to the same cause.

ABSENCE OF A PORTION OF THE BRAIN.

To the Editor of the Medical Gazette.

Sir, — I shall feel obliged by the insertion of a few notes of a case that recently came under my notice, and which seems to me to have some bearing upon the subject

of Mr. Solly's communication, at page 245 of the present volume of the Gazette.

Mrs. W.'s infant was born Nov. 20, 1843, and seemed to thrive very well until the beginning of February, 1844, when it was seized with a violent convulsive fit, which continued a considerable time. Similar fits, of shorter duration, recurred again during the rest of its life, several times daily, with intervals of apparently natural sleep. They seldom came on during the night. No determination to the head, or plethoric condition of the system, existed; the child sucked well, grew, and in fact seemed quite well, with the exception of these attacks, and a rather obstinate constipation. No means that I tried seemed to have any effect in reducing the number of the fits, although the movements of the limbs were sometimes less violent at times; and other advisers, whom the mother afterwards sought, were as unsuccessful.

I saw the child again in July, when it was plump, and as well grown as it should be for its age, except that its chest was very narrow. It continued to suck well. The mother states it neither does, or ever has taken any notice whatever, even when tried with the other children. She doubts if it sees, as a brilliant light produces no dazzling effect upon it. No teeth have appeared. The convulsions continued as before, sometimes with less, sometimes with greater frequency; the child sleeping tranquilly in the interim.

The child died Nov. 16th. For a month or two previously, the attacks of convulsions had diminished in number greatly, and for the last fortnight had disappeared, being replaced, however, first, by a constant restlessness, and afterwards by a comatose state. During the last few weeks it had become much emaciated, and the left eye projected considerably from its socket. Two teeth only had been cut. From the day of its birth to that of its death, the child, even when quite awake, and apparently perfectly easy and well, manifested no sign whatever of recognizing persons or objects.

I examined the head twenty-four hours after death, assisted by Mr. J. Griffith, of University College. Upon removing the skull-cap, the vessels were observed considerably engorged, and upon the division of the membranes, a considerable quantity of fluid escaped. The source of this was not at first obvious; but as the incision into the dura mater was made near the point where the two hemispheres come

into contact, I doubt not it followed their separation. In fact, upon stretching them asunder, we looked at once into the cavities of the ventricles, the corpus callosum, septum lucidum, and fornix, being absent, with the exception of two narrow slips of the first named portion, a few lines in breadth, stretching between the anterior portions of each hemisphere. Just anterior to the corpora quadrigemina, lying in a small cavity large enough to contain the tip of the little finger, was an hydatid, about the size of a small hazel-nut, having much smaller ones adhering to it, and filled with a gelatinous fluid. The optic nerves were remarkably small throughout their whole course, and the tubercula quadrigemina were much smaller than ordinary. A small quantity of fluid only was found in the ventricles. The cerebral substance was not injected, but most remarkably firm upon incision; while the medulla oblongata and superior portion of the medulla spinalis cut just like a piece of cartilage.—I am sir,

Your obedient servant,

JOHN CHATTO.

REMARKABLE CASE OF POISONING WITH ARSENIC.

By PROFESSOR WOHLER.

The suspicion that the widow *** residing at *** , three times married, had poisoned her two last husbands, gave occasion to their corpses being exhumed and subjected to chemical investigation. The presence of arsenic was most undoubtedly discovered in both. The greatest quantity was found, however, in the body of the second husband, although it had lain seven years in the grave. This affords an additional proof of the possibility of detecting arsenic after a long period has elapsed, and merits attention on that score.

In order to get at the arsenic, the whole of the soft parts were dried and burnt along with nitre, a procedure preferable to the French method of carbonizing by means of oil of vitriol; inasmuch as by the employment of the latter minute portions of the arsenic may escape, in the form of volatile chloride of arsenic, when chloride of sodium or ammonium happen to be present in the corpse.

It deserves notice in a medico-legal point of view, in reference to the comparatively small quantity of arsenic traced in the body of the last husband; who had died six months previously, and after protracted illness, that he had taken for many weeks before decease, by way of medicine, phosphorized oil in the shape of emulsion, and had thus consumed 16 grm. of phosphorus. On examining the stock of phosphorus in the apothecary's shop where the prescription had been made up, it was found

contaminated therewith, and containing not less than half a per cent. of arsenic.

Independently of all medico-legal considerations which this case involves, it shows the necessity for testing phosphorized drugs for arsenic. For this purpose the phosphorus ought to be melted, and then briskly agitated while molten with a mixture of chromate of potash and sulphuric acid, in order to remove any arsenic. Another point to determine was, whether arsenic is really held in solution in the pharmaceutical preparations of phosphorus. — *Liebig's Annalen*, October 1844, p. 141.

CASE OF VESICO-INTESTINAL FISTULA.

By J. M. WATSON, M. D., Murfreesboro, Tenn.

(Communicated for *Bulletin of Med. Science*.)

Mrs. M. C. H——, aged about 18 years, aborted about the 1st of December, 1843, in the fifth month of her first pregnancy. She did well for two weeks after that event; when she very imprudently rode out on horseback, on a cold day, a mile and a half, to her father's residence. After this exposure she was attacked with fever, abdominal pains, and soreness. A practitioner of the neighborhood was called in, who, it seems, did not understand her case, as he did nothing but give a few powders of calomel during his six days' attendance! On the 23d, Dr. T. of this place, was called to see her, and stated that he found her very feeble, with considerable fever, quick pulse, dry skin, and great tenderness in both iliac fossæ, and lateral parts of the hypogastrium. He cupped her as freely as she would bear, over the region of disease, prescribed a cathartic, and left some febrifuge remedies. Dr. T. visited her again on the 25th, and applied a blister over the seat of inflammation. I saw her the next day, in consultation with him. He informed me that his treatment had not produced any abatement of her sufferings. Her constitution was then about as described when Dr. T. first saw her. Our agreement was, that she should be cupped freely again, take some deobstruent powders of calomel and ipecac., and a few hours afterwards oil, or senna tea.

I recollect suggesting the propriety

of examining the uterus, &c., *per vaginam*, but was told that a midwife of some experience and judgment had done so, and said there was "nothing wrong;" and from the fact of her condition having been good up to the time of her riding out on horseback, and knowing that I would have a false delicacy to combat, I did not insist on making an examination. I learned that there had been all the while since her attack, a profuse discharge of greenish mucus from the vagina.

Dr. T. saw her again on the 27th, when he ordered another cupping, and directed a continuance of the febrifuge remedies. I visited her on the 29th, and saw no change, except an increase of debility. I cupped her as freely as her condition would admit of, and gave her calomel and ipecac., to be followed by oil, or senna. Dr. T. cupped her again the 2d of January, and gave a saline cathartic. From this time to the 22d, there was but little done besides an occasional administration of a saline cathartic, for the patient had lost confidence in her physicians, and became disgusted with their remedies; and as she resided some distance from town, I did not hear from her particularly until the 22d, when Dr. T. and myself made out a prescription for her, directing her to take some deobstruent powders, to be followed by castor oil and spirits of turpentine, and to apply the blister again.

From this time to the 27th of February, she only took 15 or 20 drops of the spirits of turpentine, irregularly, and an occasional dose of calomel. We were informed that there had been a considerable improvement in her case, from the 22d of January to the 27th of February; but her friends were mistaken, for at the latter date I saw her, and found her much worse. She was then labouring under hectic fever, her pulse 120, was very pale and greatly emaciated, and still suffering from abdominal inflammation. She had much difficulty, a few days before, in urin-

At this period I made an examination *per vaginam*, and found the os and cervix uteri and vagina free from special disease; and from the natural mobility and size of the uterus I inferred that it also was free from disease. As the pain and tenderness in the original seat of the disease were then present, and as no lesion could be detected in the parts just examined, I inferred that some portion of her bowels or mesentery had become implicated; and stated to her attendants that her disease was then seated in her bowels. Although the precise state of things could not be ascertained, yet it was very evident she was sinking very fast under a course of hopeless disease.

About the 2d of March she was attacked with chills, which were relieved by quinine, but the regular hectic continued.

After this, Dr. C. was called in and treated her case up to the 7th of May, when I was requested to see her in consultation with him, which I did, when he called my attention to the presence of a quantity of fecal matter in her urine, which she had been voiding for 48 hours. I introduced a catheter, and the instrument had no sooner entered the bladder than a strong fecal odour was emitted, and a large quantity of pretty well matured feces passed off along with her urine. The opportunity thus offered of examining the vagina and uterus was embraced, and no lesion whatever of these parts could be detected. From the examination, I inferred that some portion of intestine communicated with the fundus of the bladder, through a direct vesico-intestinal fistula. At the expiration of 4 or 5 days she expired. No *post-mortem* examination could be had, which is much to be regretted.

Remarks. We see in this case a very grave disease excited by a ride of one mile and a-half on horseback, at a time when the patient was doing well: and that the disease continued 6 days without treatment — unless a few irre-

gular doses of calomel be termed treatment — at a time when general and local bleeding, active purging, and diaphoretics, were indicated as indispensable remedies. This was doubtless a case of inflammation of the uterine appendages, which in its active, neglected, and unsubdued course, involved a portion of intestine — probably a convolution of the sigmoid flexure of the colon, and the fundus of the bladder, in adhesive inflammation, thereby forming, at an early period of the disease, an adhesion of those parts. Local excitation, favourable for the production of tubercles, was kept up here by the alternate distention and contraction of both bowel and bladder — each in its turn giving and receiving disturbance in that way. As mechanical irritation is generally admitted to favor the development of tubercles in parts subjected to it, I see no reason why the production of them should not be ascribed to the pathological condition of parts just mentioned, as the effects of both must be alike. This view of the case, along with its general history, both with regard to symptoms and treatment, make it almost certain that adhesions between the intestine and bladder were formed at an early period of the disease, and that tubercular matter was afterwards developed, which, in its softening and ulcerative process, formed the fistulous opening between the intestine and bladder.

Although no very apparent constitutional predisposition to tubercular formation existed, yet that does not afford an objection to the view taken of the case; for we are not to look to the state of the system alone for the formation of tubercles, nor to casual influences alone, apart from constitutional liability. A particular consideration of each deserves our attention; which in this case is happily exemplified. For instance, if all constitutional excitement and irritation had been allayed by two or three timely bleedings, &c., there would not probably have been any ad-

hesions, nor no subsequent tubercular formations; and on the other hand, if there had been no constitutional predisposition whatever, the adhesion between the bladder and intestine, even after it had formed under the unfavourable circumstances related, might not have passed into tubercular degenerations.

**TUBERCULAR THICKENING OF THE LIP,
SUCCESSFULLY TREATED BY IODIDE OF
POTASSIUM.**

By ALEXANDER URR.

Mrs. H., aged 28, admitted the 16th Sept., 1844. The upper lip is greatly enlarged and prominent; its external surface is the seat of superficial ulcers, for the most part covered with crusts. The affection commenced six months previously as a hard round swelling in the right side of the lip, unattended with discoloration. The swelling subsequently extended over the whole lip, and is always most conspicuous in the morning. Several indurated tubercles can be felt imbedded throughout its substance. States that her general health is good. Her tongue is clean, but the pulse is rather frequent, and she complains of thirst.

Ordered a solution of Epsom Salt and Tartar Emetic twice a day; and to pencil over the excoriated surface every morning with a lotion containing ten grains of Nitrate of Silver dissolved in an ounce of pure water.
23d.—Sores are all healed, but the swelling remains as before.

To take five grains of Plummer's Pill, night and morning.

27th.—No change in the condition of the lip. Ordered five grains of the Iodide of Potassium, dissolved in water; twice daily.

Oct. 4.—The swelling is considerably diminished; the tubercles much lessened in size.

To continue the Iodide of Potassium.

8th.—Tumefaction quite gone; no tubercles to be felt.

The above case exemplifies, in a striking manner, the power of iodide of potassium in promoting the absorption of a variety of tubercular deposition, which seemed to bear some resemblance to elephantiasis in its primal stage.

—*Med. Gaz.*

HYSTERIA.

The following formula is very highly lauded by Dr. Debreyne in the treatment of this too common disorder:—℞ Camp. ʒss. p. assaf. ʒss.; extr. belladonnæ, ʒiv.; extr. aquos. opii, ʒj. Mix and divide into 120 pills; commence with two at first per diem, and gradually increase the dose to

VOL. III.—15

six in the 24 hours; they should always be taken before food. Occasionally a wine-glassful of the infusion of valerian or orange leaves may be given with much advantage along with each dose of the pills.

BULLETIN.

Philadelphia, May, 1845.

At the Medical Commencement in the University of Pennsylvania, held on the 4th of April, 1845, the degree of Doctor of Medicine was conferred on one hundred and fifty-six gentlemen, which number, added to the six who graduated in July, 1844, and two on whom honorary degrees were conferred, makes a total of, as printed in the catalogue, of a hundred and sixty-four.

The Ohio Medical College had, we learn from competent authority, but in the absence of any published statement that has met our eyes, a class of 220 students, during the last winter session.

The first and second numbers of the *Pennsylvania Journal of Prison Discipline and Philanthropy* have been published, viz., for January and April. They contain articles of great moment to the cause which they so ably, and it seems to us, successfully, advocate. Of this Journal, and the *Sixteenth Annual Report of the Inspectors of the Eastern State Penitentiary*, we shall speak next month, when contrasting the results furnished by the latter with those set forth in the Annual Reports of the Inspectors, Warden, and Physician of the Rhode Island State Prison.

In looking over the April number of the *British and Foreign Medical Review*, just received, we find reviews of the American translations and editions of Chailly's and Moreau's Midwifery, both of which are spoken of in terms of commendation. In reference to the beautiful engravings of the latter, the reviewer says of them: "we can scarcely speak too highly, whether we regard their execution, or the happiness with which the various subjects for graphic illustrations are selected." The translations of both these works are praised, as reading smoothly and well, and that of Moreau is represented to be, "more unlike a translation than most transferences from one language to another."

A long and elaborate investigation of the claims of mesmerism, and of the evidence alleged in its favour, constitutes the chief article in this number of the Review. It is written, we believe, by the editor, Dr. Forbes. We shall most probably take occasion, hereafter, to speak of the general scope of arguments and results reached by the writer.

Miss Martineau's case and faith, some notice of which has been already taken in our columns, have given rise to a good deal of remark and commentary in the English journals. It seems that her ingenious J., the maiden who made such wonderful revelations in her magnetic slumbers, does not show to the same advantage in the eyes of the public just now, as in those of Miss Martineau. Touching the details of a certain shipwreck, the leading particulars of which were announced to the astonished group in Miss M.'s apartment, by Jane, anterior to their having been known to the latter or any of her auditors, it is now shown, by conclusive evidence, that the news and the particulars of this event were known to most of the people in the neighbourhood, and to Miss Jane inclusive, some hours before her marvellous revelations.

Not a bad Example.

The subjoined information is satisfactory in itself, independently of the secondary good that may grow out of it by suggesting a similar liberal movement on behalf of the Pennsylvania Hospital, to that manifested "down east," in favour of the Massachusetts Hospital:

MASSACHUSETTS GENERAL HOSPITAL. The Board of Trustees of this truly humane Institution have published their annual Report for the year just ended, which shows an increase of its funds, and indicates also an enlarged power of usefulness. We learn that the present amount of property owned by the Hospital is \$157,066 04. Some statements in respect to the financial concerns of the Institution are given as follows:

The balance of the Note to the Massachusetts Hospital Life Insurance Company, amounting to \$10,000, has been paid.

The Treasurer has paid, to meet the current expenses of the Hospital and the Asylum, about \$16,000, and has received from interest, rents, donations for free beds, amount paid him by the Steward of the McLean Asylum, and from dividends, about \$21,000.

The expenses of the Hospital in Allen street for 1844 were \$13,164 43—the number of patients having been 425. The expenses of

the hospital at Somerville have been \$26,125 34—the number of patients 292.

Beside the legacy of \$20,000 made by the late Israel Munson, Esq., the Trustees have received a large amount in aid of the increased usefulness of the Hospital through various public subscriptions. The sum received by this appeal to the generosity of our citizens has amounted to \$62,550, gained in sums like the following, as extracted from the Report:

| | | | |
|---------------------------|---------|-------|----------|
| Six persons have subscr'd | \$2,000 | each | \$12,000 |
| Nineteen persons | " | 1,000 | " 19,000 |
| Thirty-three | " | 500 | " 16,500 |
| Three | " | 300 | " 900 |
| Six | " | 250 | " 1,500 |
| Fourteen | " | 200 | " 2,900 |
| Seventy-eight | " | 100 | " 7,800 |
| Two | " | 75 | " 150 |
| Thirty-seven | " | 50 | " 1,850 |
| Two | " | 25 | " 50 |

A Horse Story.

"An application was lately made to the Legislature of Alabama, for a charter to a Botanic-Medical College at Wetumpka, in that State. The Bill for that purpose had gone to its third reading with every prospect of its final passage, when a story told by one of the members, with great gravity and much comic effect, did for it what all the arguments of its opponents failed to accomplish, and gave it its *quietus*. The Mobile Register gives the narrative thus:

"After Speaker Moore and others had made able speeches in support of the bill, Mr. Morrisett from Monroe, took the floor. You know him. He is an odd *genius*, and withal has good *horse sense* (as his colleague, Mr. Howard, calls it), and often speaks to the point, and with effect. With an imperturbable gravity he addressed the House in substance as follows:—'Mr. Speaker, I cannot support this bill, unless I am assured that a *distinguished* acquaintance of mine is made one of the *Professors*. He is what that College wishes to make for us, a *root doctor*, and will suit them *exact'y*. He became a doctor in two hours, and it only cost \$20 to complete his education. He bought a book, sir, and read the chapter on fevers, and that was enough. He was sent for to see a sick woman—a *very sick* woman. With his book under his arm, off he went. Her husband and their son John were in the room with the sick woman. The Doctor felt of her wrist and looked in her mouth, and then took off his hat. 'Has you gut,' addressing the husband, 'a sorrel sheep?' 'No, I never heard of such a thing in all my life.' 'Well, there is such things,' said the doctor, 'very knowingly. 'Has you got theu a sorrel horse?' 'Yes,' said John quickly, 'I rode him to mill to-day.' 'Well, he must be killed immediately,' said the doctor, 'and some *soap* must be made and given to your wife.' The poor woman turned over in her bed. John began

to object, and the husband was brought to a stand. 'Why, doctor, he is the only horse we've got, and he is worth \$100; and will not some other soup do as well?' 'No, the book says so, and there is but two questions—will you kill your horse, or let your wife die? Nothing will save her but the soup of a sorrel sheep or a sorrel horse. If you don't believe me, I will read it to you.' The doctor took up the book, turned to the chapter on fevers, read as follows:—'Good for fevers, sheep sorrel, or horse sorrel.' 'Why doctor,' exclaimed the husband, wife and son, you are mistaken, that don't mean a sorrel sheep or a sorrel horse; but'—'Well, I know what I am about,' interrupted the doctor, 'that's the way we doctors read it, and we understand it.' Now, said Mr. Morrisett, with an earnestness and gravity that were in striking contrast with the laughter of the House; unless the Hon. Speaker and the friends of this bill will assure me that my sorrel doctor will be one of the professors, I must vote against the bill.' It is unnecessary to add, that after this blow, the bill never kicked. It was effectually killed!"

We found the preceding narrative in a newspaper, and although it may have met already the eyes of many of our readers, yet its moral is so good that we have no hesitation in transferring it in our columns. If it suggested the idea that even regular schools are being multiplied at an absurd rate, both as regards the qualifications of the teachers and the excessive multiplication of students, the effect would be beneficial.

SKETCHES OF CHINA.

CHINESE MODE OF HATCHING DUCKS BY ARTIFICIAL HEAT.

One of the greatest Lions in Chusan (for we have Lions here as well as you in London), is an old Chinaman, who hatches duck eggs in thousands every spring by artificial heat. One of the establishments—for there are more than one—is situated in the valley on the north side of the city of Tinghai, and is much resorted to by the officers of the troops and strangers who visit the island. The first questions put to a sight-seeing stranger who comes here is, whether he has seen the hatching process, and if he has not, he is immediately taken out to see the old Chinaman and his ducks. An account of the house and the process will probably interest you, and I therefore send you a leaf of my private journal, which I wrote on the morning of my first visit.

It was a beautiful morning in the end of May, just such a morning as we have in the same month in England, perhaps a little warmer; the sun was upon the grass, the breeze was cool and refreshing, and

altogether the effect produced upon the system was of the most invigorating kind, and I suppose I felt it more having just arrived from Hong-Kong, and suffering slightly from the unhealthy atmosphere of that island. The mist and vapour was rolling lazily along the sides of the hills which surround the plain on which the city of Tinghai is built; the Chinese, who are generally early risers, were already proceeding to their daily labours, and although the greater part of the labouring population are very poor, yet they seem contented and happy. Walking through the city, out at the north gate, and leaving the ramparts behind, I passed through some rice fields, the first crop of which is just planted, and a five minutes' walk brought me to the poor man's cottage. He received me with Chinese politeness; asked me to sit down; offered me tea and his pipe, two things always at hand in a Chinese house, and perfectly indispensable. Having civilly declined his offer, I asked permission to examine his hatching house, to which he immediately led the way, and gave me the following account of the process. First, however, let me describe the house.

The Chinese cottages generally are wretched buildings of mud and stone, with damp earthen floors, scarcely fit for cattle to sleep in, and remind one of what the Scottish cottages were a few years ago, which now however are happily among the things that were. The present one was no exception to the general rule: bad fitting, loose, creaking doors, paper windows, dirty and torn; ducks, geese, fowls, dogs, and pigs in the house and at the doors, seemingly as important, and having equal rights with their masters; then there were children, grandchildren, and, for aught that I know, great grandchildren, all together, forming a most motley group, which, with their shaved heads, long tails, and strange costume, would be a capital subject for the pencil of Cruikshank or H. B.

The hatching-house is built at the side of the cottage, and in a kind of long shed, with mud walls, and thickly-thatched with straw. Along the ends and down one side of the building are a number of round straw baskets, well plastered with mud, to prevent them from taking fire. In the bottom of each basket there is a tile placed, or rather the tile forms the bottom of the basket; upon this the fire acts,—a small fire-place being below each basket. The top is open, having, of course, a straw cover, which fits closely, and which covers

the eggs when the process is going on, the whole having the appearance of a vase which we sometimes see placed upon a pedestal at home, or rather, exactly like the Chinese manure tanks, which perhaps are less known. In the centre of the shed, there are a number of large shelves placed one above another, upon which the eggs are laid at a certain stage of the process.

When the eggs are brought, they are put into the baskets described above, the fire is lighted below, and according to some observations made with a thermometer, the heat kept up, seeming to range from 95° to 102°, but the Chinamen regulate the heat by their own feelings, and not by thermometer, and therefore it will of course vary considerably. In four or five days after the eggs have been subject to this temperature, they are taken carefully out, one by one, to a door, in which a number of holes have been bored exactly the size of the eggs; they are then held in these holes, and the Chinamen look through to the light, and are able to tell whether they are good or not. If good, they are taken back, and replaced in their former quarters: if bad, they are of course excluded. In nine or ten days after this, that is, about fourteen days from the commencement, the eggs are taken out of the baskets, and spread out on the shelves, which I have already noticed. Here no fire-heat is applied, but they are covered over with cotton, and a kind of blanket, remaining in these circumstances about fourteen days more, when the young ducks burst their shells, and the poor Chinaman's shed teems with life. These shelves are large, and capable of holding many thousands of eggs; and it is really a curious sight, particularly during the two last days, when the hatching takes place. The Chinese who rear the young ducks in the surrounding country know exactly the day when they will be ready for removal, and in two days after the shell is burst, the whole of these little creatures are sold, and conveyed to their new quarters.

Since writing the above, I have frequently called upon the old Chinaman, in going or returning from my excursions to the hills, and have therefore had frequent opportunity of examining his establishment, which is a rich treat for the stranger who visits Chusan. — *Athenæum*.

PUBLIC HOT-WATER BATHS IN CHINA.

In the town of Shanghai, as well as in many other large Chinese towns, there are

a number of hot-water bathing establishments, which must be of great importance as regards the health and comfort of the natives. Let me describe one which I passed daily during my residence in Shanghai. There are two outer rooms used for undressing and dressing; the first and largest is for the poorer classes, the second for those who consider themselves more respectable, and who wish to be more private. As you enter the largest of these rooms, a placard which is hung near the door informs you what the charges are, and a man stands there to receive the money on entrance. Arranged in rows down the middle and round the sides of both rooms are a number of small boxes or lockers, furnished with lock and key, into which the visitors put their clothes, and where they can make sure of them when they return from the bathing room. The bathing room is entered by a small door at the farther end of the building, and is about thirty feet long and twenty wide; the bath occupying the whole space, except a narrow path round the sides. The water is from one foot to eighteen inches deep, and the sides are lined and covered with marble slabs, from which the bathers step into the water, and on which they sit and wash themselves; the furnace is placed on the outside of one of the ends, and the flues are carried through below the centre of the bath.

The establishment in the afternoon and evening is crowded with visitors, and on entering the bath-room, the first impression is almost insupportable; the hot steam or vapour meets you at the door, filling the eyes, ears, and causing perspiration to run from every pore of the body; it almost darkens the place, and the Chinamen seem in this imperfect light, with their brown skins and long tails, sporting amongst the water, render the scene a most ludicrous one to an Englishman.

Those visitors who use the common room pay only six copper cash; the other class pay eighteen, but they in addition have a cup of tea and a pipe of tobacco from the proprietors. I may mention that one hundred copper cash amount to about 4½d. of our money; so that the first class enjoy a hot-water bath for about one farthing, and the other a bath, a private room, a cup of tea, and a pipe of tobacco for something less than one penny. — *Ibid*.

University of Giessen.

The following sketch of a German Uni-

versity by a correspondent of the *Boston Atlas*, on the spot, manifests the inferiority of our students to the German collegians in more respects than one. If they study less, they certainly fight less, and drink less beer and smoke less than these latter:

"There are about 500 students here, of whom 120 are Theological students, 109 Law, 57 of Medicine and Surgery, 50 of Political Economy, 16 of Architecture, 46 of Science of Forests, 23 of Philosophy and Philology, and 62 of Pharmacy and Chemistry. This is not one of the most celebrated Universities of Germany. The only department which is at all famous abroad, is the Chemical — which, you know, is headed by the Great Liebig. There are 35 ordinary Professors, and 10 extraordinary, besides many private teachers, &c. Howitt, in his student life, characterizes Giessen as one of the most riotous places in Germany: and another writer remarks, that 100 duels are fought here annually — which, from what I have heard, cannot be far from correct. But these duels are the most ridiculous farces you can imagine. A renowned duellist comes up to a fellow student, slaps him on the shoulder, and says, 'You're an ass.' 'And you're another,' is the reply. 'At what hour, to-morrow morning, are you disengaged?' 'Let me see' (taking out his duelling book), 'at 9 I have a lecture, at 10 a duel: I'll meet you at 11.' 'Done.' Each registers the hour in his duelling book; and the next day, punctually at 11 is on the spot — generally some beer-house, out of town. Each is provided with a second, a medical student, a rapier, and his defensive armour, which covers every part, except a portion of the nose and the cheeks. They then fall to, nothing but slashing being permitted, till one gets a cut in the face, enough to draw a little blood, when the seconds interfere, the belligerents shake hands, and, in great amity, they proceed to celebrate the day at some beer-house.

"You have, probably, heard of the 'Kneips,' or beer-houses, where the students of the separate departments meet to drink and smoke. The Theological students have their 'Kneip,' the Law students theirs, &c. There they are to be found at all hours of the day, particularly in the evening. There they sit, smoking, till the room is filled with a thick and fragrant cloud, and drink till their noddles are as cloudy as the room, singing songs, with long and loud choruses. For hours this mystifying process goes on, without variety, cessation, or interruption. On Sunday, the Kneips are unusually crowded. We have very wonderful accounts, too, of the enormous drinking capacity of some of the students. 25 bottles of beer, at a sitting, is not uncommon; and, it is said, some have been as high as 60 — and one distinguished individual actually poured down 80 bottles at one sitting! This may have been slightly exaggerated; or the fellow may have been so far gone, as to see triple or quadruple, instead of double."

15*

THE RELATION OF THE PHYSICIAN TO A COLLEAGUE.

This relation is twofold. The first embraces mutual respect, and where that is not possible, let indulgences at least be the principal law of conduct.

Nothing is more difficult than to judge others, but nowhere is it more so than in the practice of medicine. It is therefore unpardonable in the public; but it is revolting to hear physicians, who know the difficulties of the art, and of forming opinions regarding it, judge their colleagues with severity, harshness, contempt, or disclose their faults, and try to raise themselves by lowering others. Oh, that I were able to impress the minds of my brethren with the truism, as forcibly as I am penetrated by it! He who degrades a colleague degrades himself and his art. For, in the first place, the more the public becomes acquainted with faults of physicians, the more will physicians become exposed as contemptible and suspicious, and the more will such exposure impair confidence; and confidence in the whole body being diminished, every single one, and the censors included, will lose a share of it. The public would be less prone to censure the medical profession, and its faults would not be a favourite topic of conversation, if the members themselves did not broach it, and set the bad example. It shows a short-sighted selfishness, and want of all common spirit, when a physician acts in such a manner and thereby hopes to raise himself, as he degrades others.—*Lancet*.

The Proper Method of Studying Chemistry.

Professor Gregory, in an introductory lecture on the opening of a laboratory of practical chemistry in the University of Edinburgh, says —

"To refer once more to the admirably conducted school of Giessen, the principle there acted on, and which I firmly hold, is, that there is not a chemistry of agriculture, of metallurgy, of calico-printing, &c., &c., but only one chemistry, which, when properly studied, gives us a full command over the chemical part of all such arts. In that laboratory there are annually educated many chemists for all possible professions; and not only is the course of instruction for research the same for all, but he who proposes to devote himself to a special branch hereafter is not permitted to occupy himself with it until he has gone through the course, by which time, if intelligent, he is quite able to dispense with those experiments which he was at first so anxious to make. All che-

mical arts or manufactures depend on the application of the general principles of chemistry; and when these principles are once well known in their purity and universality, the student has the means of improving the processes followed in the trade to a far greater extent than is possessed by those who have been all their lives practically familiar with them. Had the student from the first devoted himself, as most of them wish to do, to his own subject, he would have left the laboratory, able, perhaps, to pursue the methods which had been followed before, — although even this could not well be taught, except in an actual manufactory, — but quite incapable of taking a comprehensive view of the subject, of detecting errors and sources of loss, and suggesting useful improvements. No honest teacher could profess even to teach the processes of the chemical arts as practised, because these must be learned on a large scale, or the information acquired is of little use in actual practice, but he may, and does, enable the student to investigate his processes, to detect the causes of failure, to propose improvements, and, in short, to do all that can be done by the application of scientific principles and extensive knowledge." — *Edinburgh Monthly Journal*.

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Medical Ethics and Example.*

Medical teaching is incomplete when ethics are omitted in the curriculum. It is true that medical morals and manners are but a part of, and similar to, good morals and good manners in general; but, still there are circumstances of frequent, not to say daily, occurrence, in the professional intercourse of a physician with his

* *Medical Ethics*: A Lecture delivered December 23, 1843, before the Ohio Medical Lyceum. By John P. Harrison, M.D., Professor of Materia Medica in the Medical College of Ohio. 1844.

An Introductory Lecture on the Means of Promoting the Intellectual Improvement of the Students and Physicians of the Valley of the Mississippi. Delivered in the Medical Institute of Louisville, Nov. 4, 1844.

Annual Oration. Delivered before the Philadelphia Medical Society, by appointment, at the opening of its Session of 1844-5. By Dr. Francis Condie, M.D., Honorary Member of the Society. 1845.

A Discourse, Designed to show that Physiological Inquiries are not unfriendly to Religious Sentiment. Delivered in the Tenth Presbyterian Church, Philadelphia, Jan. 18, 1845, by M. B. Hope, M.D. Published by the Jefferson Medical Class.

patients and his medical brethren, not directly indicated nor always provided for by express provision and rule in the laws which govern his intercourse with the world at large. If disposed to reduce things to first principles, it would be easy to say that all these apparently complicated matters are included in the golden rule, to do to another as we would that he should do to us, and that the Sermon on the Mount embraces the whole of Medical Ethics. We must, in truth, acknowledge that, although commentaries, the result of wordly experience, are needed, these will be of small avail if the spirit of that of the Divine teaching is lost sight of.

But, as we have so much that is valuable in precept and practice in the discourses now before us, we shall restrict ourselves mainly to the duty of selection and arrangement of the materials for instruction which they present.

Dr. Harrison inquires, in his discourse, into the duty or obligation which the physician owes to the profession of medicine, to his patients, and to his fellow practitioners. Under the first question "*What obligations are we under to the profession of Medicine?*" the lecturer makes the following appropriate observations:

"The power of principle must operate in this higher sphere of obligation with an almost exclusive predominance, for rules cannot be made conducive to the object. Our Medical Schools may lay down positive rules in reference to the granting of a diploma to students who strictly obey the requisitions of attendance on lectures, and who manifest upon individual examination an adequate amount of medical knowledge. But after the young man has passed the threshold of his Alma Mater, what rule of binding force is there to impose an obligation on him to cultivate his profession; what to urge him on in the race of a generous emulation in pursuit of higher degrees of knowledge in the science, and of certainty in the practice of medicine! Unless an operative conviction of duty, and the calls of a noble ambition, stir the moving forces of his mind, he will soon sink down into the calm indifference of one who thinks that he has toiled enough, and henceforth the rewards of honour and of wealth await his course.

"Medicine is neither a perfect, nor a stationary science. It incessantly demands at our hands assiduous efforts to augment its resources, multiply its data, and enhance its certainty.

"The physician, therefore, who neglects its culture, who foregoes opportunities of imparting strength to its already established truths, of rectifying errors, and of discovering new facts, or of placing familiar phenomena in lights novel and useful, proves derelict to the just.

claims of the profession, and outrages the hottest sympathies which can bind intellect and moral sensibility to practical usefulness."

"To the profession we are under a primary obligation to exercise a candid, ingenuous spirit, which will urge us to seek truth, and to embrace truth, with strenuous diligence. In obedience to this end we will read much, reflect much, observe attentively, and make daily records of all such matters as relate to medical science."

Dr. Harrison recommends the most approved authors in the different departments of medical science for the repeated and diligent perusal of the student; and, as regards self-observation, he enjoins his auditors to make each day a critic to the last. Perseverance is enjoined:—

"Carefully, steadfastly, perseveringly dedicate yourselves to this one great vital pursuit, and thus you will attain a position in the profession and in society, from which neither the weapons of malice, and circumvention of empirical fraud, nor all the more open assaults of interested opposition can dislodge you.

"Do not indulge a propensity to look to chance rather than to probability for your professional success; never pay court to fortune, but ever with assiduity solicit the rewards of industry and virtue. On the immovable substratum of enlightened zeal, patient toil, and unremitting attention to your business, make such sober estimates of final victory over all exterior difficulty, as shall cheer and invigorate you in your professional career."

Dr. Drake, whose Introductory Lecture is replete with sound advice, first, to the student when attending lectures, and secondly, to the student in a more enlarged sense, who has procured his degree, recommends continued adhesion to the profession by those who have once entered fairly and regularly its ranks. He says:

"Avoid the example of those who are ever ready to relinquish their profession for some other. In giving you this advice, I am apparently counteracting the interests of those whom I represent; for the practice I am reprehending increases the number of students. Nevertheless, my colleagues look to the dignity of the profession, not less than the emoluments of teaching. He who is willing to abandon his vocation, generally looks out for the opportunity, and, as a matter of course, ceases to cultivate it. When a very young man leaves the ranks, it is a small affair; but when a physician of ripened experience goes out, society suffers. A raw recruit may desert when the battle is impending, without causing defeat; but a veteran cannot be spared. The practice of which I speak, prevails in some parts of our country to such a degree, that the care of society is always in the hands of the inexperienced. There is little of the knowledge which comes

from long and varied practice—the sound judgment which time only can confer—the sympathy which flows from the cherished intercourse of years, between physician and patient. An epidemic sweeps over the land—there is no veteran arm to save—no friendly eye to pity. I beseech you, gentlemen, after having, through days and nights of toil, acquired your profession, not to cast it off. Regard it as you would a wife whom, through storm and sunshine, you had won by vows and prayers and pledges. Make it your bride and value her for the price you have paid. Adhere to her for the sake of her honour. Let not merchandise, nor tavern-keeping, nor office-hunting, divide your affections with her. Let not the sugar-cane boast of a conquest over her; nor the cotton-plant triumph at her desertion; see that she does not perish by the hemp! Confide in her, and she will prove faithful to you; labour in her service, and she will amply repay you, with patients when you are in health—with sympathizing friends in your sickness and sorrow. Such a bride never waxes either old or ugly; for every year brings out some new aspect of beauty—some brighter tint of loveliness. She will enrich you with the means of independence—'She will do you good and not evil all the days of your life; and when you are no more, she will erect to your memory an imperishable monument.'

Dr. Harrison very properly regards it to be part of the duty of the physician to his patients to avoid quackery and association with quackery:—

"Science can never associate with charlatantry. Science is open, liberal, manly—quackery is sly, deceptive, mean. Science courts the open day, and throws its treasures with generous hand along the highway of human life—but quackery seeks concealment, works in the dark places of the earth, and gathers with rapacious hand its nourishment and life from the unrelieved miseries of man. Therefore shun all intercommunion with empirical pretenders, abet their presumptions in no way, and give no countenance to specifics, nostrums, or secret remedies, whether patented or unpatented."

But although we may preserve our own dignity by refusing to associate with quacks, the public, and often legislators, too, pay us and science an indifferent compliment, in their indicating a preference and greater sympathy for the knavish portion of the community. One cause of this anomalous state of things, is pointed out by Dr. Condie, in his judicious discourse, when he says:

"The skill of a physician, and consequently the propriety of the remedial measures pursued by him may, unquestionably, be very fairly tested by the general result of his practice—but to do this requires opportunities for observ-

ation, and an accuracy of judgment which the members of the community at large do not possess—their decision is consequently founded, in most instances, upon the result of single cases, the circumstances of which are often but imperfectly understood, or entirely misrepresented.

"It is this want of ability in the public, to decide correctly upon the value of remedial agents and the competency of medical practitioners—combined with that desire which all alike experience for speedy and certain relief, that renders it, more perhaps than any other cause, the ready dupe of bold pretension and unprincipled empiricism. The vaunted infallibility of any nostrum that promises an immediate restoration of health, becomes far more attractive than the slow and cautious measures pursued by the scientific physician. It is not, therefore, surprising, that the preposterous absurdities of homœopathy—the equally ridiculous and mischievous practices of the Thompsonians, Botanists, and Hydropathists, or the more novel folly of the Crono-thermists, should become more popular than the curative skill exercised by the highest order of medical abilities, accompanied by the greatest natural and acquired advantages.

"In the United States, the members of the community have, unfortunately, little else to direct them in their selection of a physician, than their own deceptive judgments, or the equally uncertain criterion of popular opinion. From the law, the medical profession receives neither encouragement nor protection. It is laid open alike to every one who may think proper to enter it—without question as to his competence for the faithful performance of his duties as a member. Whoever assumes to himself the title of doctor, belongs of right to the profession—there being no legal provision by which his claims to membership may be tested or denied. In fact, the individual upon whom the title of Doctor in Medicine has been conferred by the most distinguished University, to indicate that he has completed a regular pupilage, and is qualified to practise the art he has fully and faithfully studied, and he who but yesterday deserted the workshop of the mechanic or the counter of the tradesman, and without either natural abilities, or any preparatory study, announces himself as a doctor of the healing art, are both equally recognized and protected by the law."

It would seem that the temptation to win the approval of the crowd, the great and little vulgar, and still more, perhaps, to pocket the dollars of the gullible, is too strong to be resisted, even by those who, when receiving their medical degrees, made with the college and the profession an implied engagement, at least, to advance the cause of medical science and to maintain sound medical ethics. Dr. Condie indicates one of the sources of this lament-

able state of things, to be the debasing kind of rivalry among many of our medical schools, as to who shall have the greatest number of students, regardless of the higher considerations of fitness on their own part to teach, or of the students by suitable preliminary education to be taught.

"But, unfortunately, many of our schools would seem to be organized solely with the view of enabling men of inferior talents and contracted circumstances, to obtain a support from the income of their lectureships. In too many, indeed, the means by which the size of the classes may be increased would appear to occupy the minds of the lecturers far more than the means by which the pupils may be best prepared for an honourable and faithful discharge of their duties as physicians. From these causes, as well as from the usual incentives of pride and ambition, a very powerful temptation is created to reduce the amount and expense of instruction, and increase the facilities for graduation, as a means of attracting the attendance of students. And there is a danger that, by this unworthy species of competition, a number of imperfectly educated physicians—clothed with the doctorate—may be sent forth annually, into every section of our country, who will not only bring disgrace upon the profession by their ignorance, but, being unable to secure public confidence, and obtain a sufficient income from the regular practice of their profession, will be prompted to resort to the arts of the charlatan to escape starvation.

"Even now, in consequence of the ranks of our profession having become overcrowded, and the number of incompetent members who have obtained admission into it, we are presented almost daily with the humiliating spectacle of those upon whom the degree of Doctor of Medicine has been conferred by one or other of our medical schools—in direct violation of those principles in which their diplomas certify to the world that they have been thoroughly instructed—practising for a living some one of the popular forms of empiricism. Perfectly indifferent—so long as they can obtain, through its means, an income adequate to their wants—how decidedly it may be condemned by common sense, and be repudiated by every established truth in physiology, pathology, and therapeutics, and reckless as to its influence upon the health and lives of those who, in the confidence of blind credulity, submit themselves to their care.

"Many of the graduates of our medical schools have sunk into even a still lower state of degradation. Without pretending to any settled medical principles or plan of practice, whether true or false, regular or empirical, they are willing, for a bare subsistence, to become all things to all men. They exhibit not the least hesitation, to pander to the ignorance, the caprice, and the delusion of the masses of the community, and, as if

dices of their patients dictate, to prescribe for the ailments of one according to a system of quackery, the very opposite of that which they adopt for those of another—thus running through, in the same day, all the phases of empiricism—while, at the same time, they assure the more enlightened and reflecting portion of the community that their confidence in the regular rules of practice is unshaken, and that according to these they are prepared to prescribe whenever it shall accord with the wishes of their patients.

"It is the conduct of these medical freebooters—who unfurl whatever flag, whether lawful or piratical, that suits, for the occasion, their predatory intentions, while they exhibit no real fealty to any—which has, more perhaps than any other cause, sullied the character and lowered the standing of the profession of which they claim to be members, and to a very great extent alienated from it the respect and confidence of the public."

The discourse by the Rev. M. B. Hope, M.D., on Physiology applied to Religion, with the text, or motto—"Oppositions of science falsely so called"—1 Timothy 6: 20," is admirably calculated to bring together, with a proper understanding of the respective merits and connections of their studies, severally, the physician and the divine; and to show a harmony between them in these respects, as there is in the practical routine of their daily duties.

Dr. Hope has enjoyed the not common advantage of both a medical and a theological education, and is in this way prepared to speak, with knowledge, of the relations of physiological science to religion, if not to dogmatic theology. Although yet young, his field of action has been large and diversified, both as a missionary in the East and as the agent of religious and philanthropical societies at home. With such opportunities, and a mind thus cultivated and enlarged, he is just the person whom one would like to hear discourse on the matter he has chosen on the present occasion. Before placing any extracts before our readers, we must express our regret at not being able to introduce the discourse entire into our columns—believing, as we do, that it is eminently calculated to instruct and benefit students of all classes and denominations.

The opening, or statement of the case, prior to argument, is made in the following language:

"The sentiment has been most industriously propagated in certain quarters, that the advance of science tends to undermine the faith of religion. And men rejecting the fundamental

doctrines of religion, call themselves *Philosophers, par excellence*.

"It is flattering to the pride of our reason to conceive that science lifts us to an eminence, from whence we can look down upon the popular religious creed, as the sages of Greece and Rome did upon the gross mythology of the common people: and there is plausibility enough in the sentiment, to make it extremely dangerous, especially to those who dislike the restraints which religion imposes upon the depraved passions of the human heart.

"On every account, this sentiment demands a calm enquiry, and especially if, as we believe and are sure, it is all a mistake; and true science, instead of the mortal foe, can be shown to be the *twin sister* of true religion. Any passing discrepancy between them is only apparent, and proceeds from one or the other being misunderstood. Either it is not pure religion, but the bigoted views of some narrow religionist, on the one hand, or else on the other, it is not true science, but the partial and presumptuous 'oppositions of science falsely so called.'

"The friends of religion have themselves to blame in part, for this supposed hostility between revealed religion, and the researches of science. They have often attempted to crush by authority the spirit of philosophical inquiry; and disprove by ecclesiastical adjudication, the inductions of science. When Galileo demonstrated the true doctrines of the solar system, viz: that the sun was stationary while the earth revolved, first on its own axis and then around the sun,—the church of Rome instead of grappling with his arguments and demonstrations, and trying them by the test of truth, pronounced them heretical; and waged against them a war of ecclesiastical censures, which could issue only in her own inglorious defeat.

"The same course has been pursued repeatedly since. When the infant science of geology began to unfold the wondrous history of the earth, and those who undertook to decypher the mysterious characters in which that history was written upon its crumbling fossil monuments, began to make out dates older than the received chronology of the Bible, the science was denounced as essentially infidel in its tendency, and even pious and learned divines, who attempted to ascertain what its records did really teach, and to harmonize them with the Scriptures, were pelted with reproaches as enemies in disguise. Such conduct is both useless and unwise. The more perfectly the works of nature are explored, the more profoundly the sciences which depend upon them are cultivated, the more clear and satisfactory will be their harmony with Divine Revelation. It is impossible that the works of God should be at war with his word. If philosophical theories are believed to be wrong, let it be shown by investigation and argument. To attempt to put them down by denunciation, will always be held by the world, as proof of a

narrow mind, or a bad cause. The truth—the whole truth, and nothing but the truth, should be our motto, whether science or religion be the object of inquiry.

"It is due to the enlightened friends of religion to disclaim, in their name, all fellowship with a kind of warfare, which has done much to bring discredit upon the cause of religion.

"But the fault is not all, nor even mainly, with the friends of religion. Much of the hostility between these twin sisters, is due to 'the oppositions of science falsely so called.' The keen impetuosity of the human mind, stimulated by the ardent desire of discovery, has ever tempted philosophers to generalize too hastily, and to presume too strongly upon the truth of conclusions thus drawn. And in addition to this, we are sorry to say, that some distinguished men have shown a strong prejudice, and sometimes a malignant opposition, to the evidences of religion, widely different from that calm and sincere love of truth, which should ever actuate the true philosopher. We might cite in illustration of these statements, the case of the famous Hindoo astronomical tables, which were hailed with exultation by certain philosophers, as furnishing conclusive proof that the Hindoo Astronomers had observed the starry heavens, long before they were created, according to the Chronology of Moses; until De Lambre and La Place demonstrated that they were borrowed from the Arabians after the Christian era. Afterwards, and on the same principle, the Zodiacs of Dendera and Esneh were pressed into the service, to prove that the temples which contained them were older than the world, till Champollion discovered the key to their hieroglyphic inscriptions, which revealed the fact, that they were founded by Roman Emperors, after the time of Christ. And as for the flourish of trumpets with which skepticism hailed the announcements of the first speculations of geology, we believe the most timid among us, have long since given their last fears to the wind. Such facts should make the disciples of infidelity less hasty and confident, and allay the jealousy of the friends of revelation."

The lecturer next approaches "the grand question," viz.: "whether science, in its profound and successful researches, has explained the whole phenomena of the universe by the agency of physical causes; in such a sense as to dispense with the existence of a God?" His more specific inquiry, however, is, whether the fascinating study of physiology "has mastered, and accounted for, all the phenomena of life, by reference to the laws of material organization, under the action of the vital principle, so as to set aside the doctrine of all spiritual agency whatever. We maintain that it has not—nay more, that it has no such tendency."

After some well expressed observations on the fallacy of assuming physical causes as adequate to explain phenomena which were once referred to the direct power of God, Dr. Hope takes up the physiological branch of the argument, which he handles with no little ability and evident knowledge of the subject.

In closing, for the present, an imperfect notice of this discourse, we cannot refrain from expressing our intention to make our readers acquainted hereafter with some of its more striking passages.

Ashwell on Diseases Peculiar to Women.*

This treatise, we are told by the author in his Preface, "is strictly devoted to pathology and treatment, not to anatomical detail and physiological research." And also, "Numerous cases are narrated, in order that their symptoms may show whether the histories of the various diseases are accurately given, and from their successful or unfavourable issue, the danger of the malady and the worth of treatment may be demonstrated." Another feature is the appending "many formulæ of remedies" "to the various chapters."

Dr. Ashwell first treats of *Functional Diseases of the Uterine System*, then of *The Organic Diseases of the Internal and External Female Organs*. A history and description of the symptoms is preceded by the definition of each disease; its causes, pathology, and complications are followed by an annunciation of the principles and details of treatment; all of which latter points are illustrated by cases, some drawn from the author's note book, others from the experience of his friends. The scope is sufficiently extensive and the style in which the outlines are filled up satisfactory enough to engage and retain the attention of the practical man in quest of knowledge on the subjects discussed in this volume; but he who wants the guidance of system and tires of details will sometimes turn over the leaves with a feeling of disappointment. It is easier to praise the abundance of mate-

* A Practical Treatise on the Diseases peculiar to Women. Illustrated by Cases. Derived from Hospital and Private Practice. By Samuel Ashwell, M.D., Member of the Royal College of Surgeons, and Lecturer to Guy's Hospital. First complete American from the last London edition. With notes, by Paul P. Goddard, M.D., M.A.R.S., M.A.N.S., Lecturer on Anatomy, &c. Philadelphia: Lea & Blanchard, 1845. pp. 520. 8vo.

rials than the beauty of their arrangement. The usefulness of Dr. Ashwell's labours will not fail to be recognized, although their popularity may not be great. To the advanced student and general practitioner we can recommend this volume for its safe copiousness and instructive iteration. It combines, in degree, the character of lectures and journal, details of cases and formulae.

The American editor, Dr. Goddard, has been singularly fearful of obtruding himself on the attention of his readers, who are only now and then, for a brief space, made sensible of his presence at all. His notes are indeed "occasional," and his cases "few." If, with his known ability to do more, he has thus restricted himself, we must construe his reserve into a belief, that his author's positions are so strong as not to require any additional outworks and flanking, to insure respect, still less flaunting flags or blazoned banners to win admiration.

Worcester on Diseases of the Skin.*

Again the pleasing task devolves on us of noticing in terms of commendation a work prepared by a western physician and published by a western house. Dr. Worcester's Synopsis will prove to be a valuable contribution to dermatology; a branch of medicine hitherto much neglected among us. For a long time, indeed, we must rely to a considerable extent on the accumulated knowledge of this subject on European, and especially on continental works; for on the continent of Europe alone, and in Paris more particularly, are there hospitals appropriated exclusively to those labouring under cutaneous diseases, and there alone is a special clinic given on these diseases.

Dr. Worcester, in a brief preface, points out the source of the materials and scope of his volume. "Utility, not originality, has been his design; he has drawn information from every source within his reach, and it

* A Synopsis of the Symptoms, Diagnosis, and Treatment of the more Common and Important Diseases of the Skin. With Sixty Coloured Figures. By N. Worcester, M.D., Professor of Physical Diagnosis and General Pathology in the Medical School of Cleveland, &c. Philadelphia, Thomas Cowperthwaite & Co. Boston, Charles C. Little and James Brown. Cincinnati, Desilver & Burr.

is hoped that he has proved, in this compendium, that he has studied with some care, the works of Willan, Bateman, Alibert, Cazenave and Schedel, Plumbe, Thompson, Rayer, Wilson, Gibert, Erichson, Ricord, Baumes, &c. The figures have been selected from Willan and Bateman, Thompson, Rayer, Alibert, Wilson, Erichson, Cazenave and Ricord; and it is believed they will be found well executed."

To the truth of the following sentence, and the hope accompanying, we fully concur: "No one has taught this much neglected branch of medicine, that has not felt the want of such a treatise as this is intended to be; and it is the hope of the author that it may be found to supply this deficiency."

In a well written Introduction, Dr. Worcester presents a brief history of Cutaneous Diseases, their classification, diagnosis, prognosis, causes and treatment.

Upon the whole, we may safely recommend this work as a good summary for the introduction of the student and practitioner to a better knowledge of cutaneous diseases. The plates are numerous and well coloured—superior, as a whole, to any exhibition of the kind that has yet been issued from the American press. Great credit in this respect, and in the mechanical details generally, is due to the enterprising Cincinnati publishers, Messrs. Desilver & Burr.

Spencer on Animal Heat.*

We may congratulate both Dr. Spencer and his class, on the inquiring spirit and philosophical research of the former, and on the advantages resulting to the latter, from the manifestation of these qualities in their teacher—taking the small volume before us as an example. It must be borne in mind, as the author informs us, that these "lectures are the results rather of occasional moments of leisure from the duties of an active professional life, than of a special devotion to the cultivation of the more inviting field of Chemistry and Physiology."

Into an analysis of these lectures, which

* Vital Chemistry. Lectures on Animal Heat. By Thomas Spencer, M.D., Professor of the Institutes and Practice of Medicine, in the Medical Institution of Geneva College. Published by request of the Class. Geneva, 1845. pp. 114. 18mo.

must almost unavoidably be attended with an argument on the whole subject discussed in them, we have not now the space nor the time to enter. We run no risk, however, in recommending them for perusal, as furnishing a good and salutary exercise to the mind of the student, and preparing him for still more extended and diversified inquiries into chemico-physiology.

The object of the lecturer is indicated in the following paragraph in his Preface :

"An attempt to explain the vapour of the pulmonary excretion, led me by successive steps to a belief, not only in the intimate chemical relations of respiration and calorification, but of all the functions and phenomena of organic life. If every step has been fortified by ascertained facts and the deductions have been legitimately drawn, a CIRCLE OF VITAL AFFINITIES, uniting all the structures and functions of the organism, and making each set of capillaries mutually dependent on and balanced by others, in the chemico-vital changes produced upon their passing currents of blood, has been determined. That such a series exists, and that the links in the chain may be demonstrated, cannot be doubted; but in view of the intricacy of the subject, and of my limited knowledge of experimental chemistry, a due distrust is still felt in the accuracy of the attempted determination."

Harris's Dental Surgery.*

Interested as every person is on the subject of teeth and their preservation, and the operations that may, some time or other, be necessary in his own case, he cannot but regard with pleasure the progress of sound dental surgery among us,—of that surgery which is based upon accurate pathology, and seeks to obtain its ends by the simplest means. Foremost among the contributors to this desirable end must be ranked Dr. Chapin Harris, author of the work now before us. We speak of the publication and diffusion of principles deduced from and again guiding to practice, which Dr. H. has so frequently and fully promulgated in his different works;

* The Principles and Practice of Dental Surgery. By Chapin A. Harris, M.D., D.D.S., Professor of Practical Dentistry and Dental Pathology in the Baltimore College of Dental Surgery, &c., &c. Second Edition Revised, Modified, and Greatly Enlarged. Illustrated by Sixty-nine Wood Engravings. Philadelphia. Lindsay & Blakiston, 1845. pp. 600. 8vo.

without our meaning to underrate the skill and dexterity of many of his brethren, whose knowledge, though available for the benefit of their own patients, has not been made productive for the community.

The first chapter of the present work is on the progress of dental surgery in Europe, and its introduction into, progress and present condition in the United States, followed by an account of the importance attached to the human teeth, and customs concerning them.

These two chapters are introductory to the body of the work, the first part of which is given to a consideration of the Anatomy and Physiology of the Mouth, including first and second dentition, irregularity of the teeth, their osseous union, and supernumerary teeth. Part second includes a notice of the physical characteristics of the teeth, gums, salivary calculus, fluids of the mouth, lips, tongue.

Part third is on diseases of the teeth, including caries, toothache, extraction of the teeth, atrophy and necrosis of the teeth, exostosis, spina ventosa, the denuding process, spontaneous abrasion of the cutting edges of the teeth, fractures and other injuries of the teeth from mechanical violence. Part fourth embraces a view of the diseases of the gums, their preternatural growth, tumours, abscess, &c., &c., spontaneous destruction and necrosis of the alveolar process. The effects of mercury, tobacco, and snuff upon the teeth and gums, &c., are investigated in this part, the concluding chapter of which is on the Effects of Diseased Teeth and Gums on the general health.

Part fifth, embodying a separate essay of the author's on Diseases of the Maxillary Sinus, is one of the new and important additions to the present edition. It treats of a subject often overlooked and generally misunderstood.

The sixth and concluding part of the "Principles and Practice of Dental Surgery" is on Mechanical Dentistry, which includes artificial teeth, and the different methods of applying them.

The reader will perceive the contents of the volume and when we add wood engravings and the plates both the text and which n for it a

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ON THE MORTALITY IN PRISONS, AND THE DISEASES MOST FREQUENTLY FATAL TO PRISONERS.

By WILLIAM BALZ, M.D.,

Physician to Millbank Prison, and Lecturer on Forensic Medicine at St. Bartholomew's Hospital.*

THIS paper, of which only an abstract was read, contains the results of an inquiry into the rate of mortality, and the nature of the more prevalent diseases in the Millbank Penitentiary, and other penal establishments, during the last fifteen or twenty years.

The annual rate of mortality in the different prisons of England, calculated from the average number of prisoners, and the number of deaths, exclusive of the deaths from Asiatic cholera, has ranged from $15\frac{1}{2}$ per thousand to nearly 39 per thousand; in the state prisons, or penitentiaries of the United States, from 19 to 39 per thousand; and in Switzerland from 25 to 35 per thousand. In France, the mortality, including deaths from Asiatic cholera, has ranged, in the hulks, from $39\frac{1}{2}$ to $55\frac{1}{2}$ per thousand, and in the Maisons de Force et de Correction from $30\frac{1}{2}$ to nearly 87 per thousand.

The annual rate of mortality amongst persons at liberty, in the different countries and cities in which these prisons are situated, and at the periods of life of prisoners, has varied very little from 15 per thousand.

The excess of mortality has been much greater in some prisons than in others; but the amount of this excess of mortality is no measure of the de-

gree in which the health of the prisoners is affected by the discipline, diet, and general arrangements to which they are subjected, since there are many circumstances, independent of all systems of prison discipline and internal prison arrangements, which greatly affect the number of deaths occurring in prisons. The most important of these circumstances are, 1st, the extent to which the practice is carried of granting pardon to convicts in failing health; 2d, the degree of predisposition to disease of the class of persons forming the population of the prison; 3d, the length of confinement which the prisoners undergo; and 4th, their liability to endemic and epidemic diseases owing to the situation of the prison.

The high rate of mortality which prisoners suffer is really the effect of their punishment, and is not owing to the unhealthiness of the class whence criminals are, for the most part, derived. This is proved by the increased mortality which attends an increased duration of imprisonment, and by the result of comparing the rates of mortality in English prisons with the rates of mortality of the population of Liverpool, the most unhealthy town in England. The mortality of persons of the ages of 15 to 70, in Liverpool, during 1841, was 18 per thousand living. But the annual ratio of deaths amongst the prisoners in the county prisons of England has been nearly 23 per thousand; amongst those confined in the Millbank Penitentiary at all periods of imprisonment, nearly 31 per thousand; and amongst those passing through the third

* At a Meeting of the Royal Medical and Chirurgical Society.

year of their confinement in that institution, more than 52 per thousand.

In America, France, and Switzerland, as well as in England, the proportion of deaths occurring annually has been much greater amongst criminals in prisons than amongst persons of a corresponding class of society out of prison.

The diseases to which this increased rate of mortality has been chiefly due in the Millbank Penitentiary, and all prisons where criminals are confined for long periods, are the various forms of tuberculous scrofula, and especially tubercular phthisis. No other class of diseases has produced uniformly in all prisons a higher ratio of deaths, than the same class of diseases causes amongst persons at liberty; whilst the mortality from many diseases is less in prisons than amongst the free population. Even where endemic diseases have been prevalent, owing to the unhealthy site of the prison, the great excess of mortality has still been caused by tubercular diseases.

The causes which have rendered tubercular disease so frequent and so fatal in prisons are, in the author's opinion—1st, deficient ventilation; 2d, cold; 3d, sedentary occupations, and want of active bodily exercise; 4th, a listless, if not dejected state of mind; and 5th, poorness of the diet.

The diet in the Millbank Penitentiary, and in the American prisons, has been more abundant than that of the agricultural labourer. But, in many other prisons, the allowance of food has been very scanty.

In respect of the diet, and also of the ventilation and warming, a great improvement has recently been made in the prisons of England, and it is to be expected that after the lapse of a few years a great amelioration will be found to have taken place in the health of prisoners.

Dr. Webster, without expressing his concurrence in all the opinions now promulgated, agreed with the author respecting the effects produced upon prisoners

when only confined for a short period, who often left the prison in an improved state of health, compared with their previous condition. This fact had been generally observed in gaols, and he would, in confirmation of that opinion, refer to the results met with during the last two years at the City Bridewell, as he could speak on the subject from personal knowledge. The Fellows, of course, knew that the persons committed to this prison were dissolute and depraved characters, who had been exposed to the inclemencies of the weather, and often to the want of food; nevertheless, most of them leave the prison in better condition than at their committal. The period of confinement varies from a few days to three months, the average length being 30 days. To prove that the health of the City Bridewell prisoners is not deteriorated by their confinement, he (Dr. W.) would remark, that during 1843, when the committals were upwards of 1000, only sixteen infirmity cases occurred, and one death; whilst in 1844, when the numbers committed amounted to nearly 1150, there was only one death during the year, and twenty-four infirmity cases, most of them being trifling complaints. Properly speaking, even the single death recorded ought not to be ascribed to the prison discipline, since the patient remained fourteen days in Bridewell, and was an old vagrant, who laboured under fever at his committal, and had suffered much from misery and destitution. Long confinement often injures the health of prisoners, but short periods frequently prove advantageous, as shown by Dr. Baly's observations. He (Dr. W.) also agreed with the author as to the frequency of phthisis and bowel complaints; indeed, at the Penitentiary, consumption seemed lately to have been the most fatal disease amongst the inmates. The parliamentary reports for 1844 stated that of the eleven deaths met with in that prison during the previous year, seven were from phthisis; at the same time, amongst the fourteen criminals pardoned on account of impaired bodily health, the majority were affected with pectoral disease, seven being phthisis and one pleurisy. Again, in 1842, epidemic dysentery was very prevalent in the Penitentiary, when nine deaths occurred from that disease. He made these remarks on purpose to ascertain whether the author coincided with him that the mode of ventilating and warming prisons usually employed materially contributed to increase pectoral diseases amongst the in-

mates. The breathing of hot dry air irritates the mucous membranes of the lungs, produces cough, and, according to his (Dr. W.'s) opinion, in addition to the mental depression of prisoners, this dry and overheated atmosphere tended to bring on consumption, especially in those predisposed to that complaint. Besides local causes, the food consumed had, he thought, much influence on the production of bowel complaints, particularly the frequent use of liquid food, such as pea-soup; perhaps Dr. Baly would state his views to the Society on these points. Although the author, in the abstract of his paper, had only alluded to the bodily diseases affecting the Penitentiary inmates, there was another question of equal importance, to which he (Dr. W.) would wish to direct attention, in order to learn from Dr. Baly how far the mental condition of the criminals was affected by the discipline and seclusion of the prison, when they were placed in solitary confinement. This was an important subject, and one which had recently occupied the attention of philanthropists and medical men in this country, as also in France and America. Dr. Baly might feel unwilling to reply to such questions, as he held a public appointment under government; but he (Dr. W.) being differently situated, considered it would not be out of place to mention, in a medical society like the present, a few facts illustrative of the influence which solitary confinement produced, from the records of the prison to which Dr. Baly is attached. In 1839, according to parliamentary reports, three insane patients were sent from the Penitentiary to an asylum; five in 1840, or, taking the eighteen months prior to July, 1841, when the solitary system was strictly enforced, fifteen persons became insane; whereas, during the subsequent eighteen months—that is, when an important modification took place in the prison discipline—five insane criminals were removed, and only two during the year embraced in the report of 1844. This remarkable diminution in the number of Penitentiary inmates transferred to a lunatic asylum is conclusive on the subject, as it occurred subsequent to the period when the prohibition to intercourse was limited to three months after admission, the prisoners being then permitted to converse with two or three other prisoners during the hours of exercise, attention being, however, paid to the age, the disposition, and offences of the criminals thus allowed to associate together.

Stronger evidence cannot be adduced respecting the effects which solitary confinement exerts upon the minds of ignorant or depraved individuals, than the facts just stated. He (Dr. W.) entertained strong opinions upon this question, and considered no punishment so severe to a living human being as long continued seclusion from the company of his fellow creatures, especially to uneducated individuals, often devoid, not only of any good principles to fall back upon during their solitude, but who were, instead, frequently the slaves of their own evil passions.

Dr. Baly observed that his paper had reference simply to the effect of imprisonment on the body, and he therefore should refrain from answering Dr. Webster's question in reference to the effect of solitary confinement on the mind. In regard to the influence of heated air in the production of phthisis, in the Penitentiary, cold appeared to have the most injurious influence on the prisoners. He could not trace the production of phthisis to hot air. Facts were, however, he believed, on record, to show that hot air was injurious, although, as yet, he was aware of no information from any prison which warranted a belief that it caused phthisis. With respect to diarrhœa and dysentery, he felt convinced, when these diseases were prevalent for any lengthened period, that they were not produced by the kind of food which had been taken, but owed their origin to some peculiarity of the locality in which the prison was situated. Liquid and poor diet, though they would not originate, nevertheless aggravated these diseases. He had, in his paper, mentioned mental depression as one of the causes of bodily disease, and this depression, of course, would be increased by solitary confinement.

Dr. Webster did not refer the occurrence of phthisis to the influence of hot air, but it might produce other chest affections, as bronchitis, which would terminate in phthisis.

Dr. James Johnson referred to the curious fact stated in the paper, that the mortality in prisons always lessened after the fourth year, and inquired if any cause could be assigned for this circumstance?

Dr. Baly observed, that it was a fact, that the mortality in the Penitentiary was less in the fifth than in the fourth year. It had been noticed, also, in the Eastern Penitentiary of America, that this circumstance obtained; and in this institution, also, there was less mortality in the fourth

than in the third year. He explained this by the fact that those prisoners who were liable to be affected with scrofula fell a victim to that disease before the termination of the fourth year. Those who survived that period were not liable to be thus diseased.

Dr. Cursham inquired how long a time it required for scrofula to develop itself in those prisoners in whom there was no trace of the disease previous to their admission into the Penitentiary?

Dr. Baly replied that scrofula began to develop itself in the second six months' imprisonment, and increased in severity during the next eighteen months. He possessed only a limited number of facts in regard to this question, but it would appear that the disease gradually declined after the second year of its existence.

Mr. Bransby Cooper inquired what was meant by scrofula, in the paper of Dr. Baly. The term was so indefinite that he wished to know in what way it was employed.

Dr. Baly, in the abstract, had referred tuberculous scrofula to imprisonment. He considered this disease to consist of a deposit of tuberculous matter in the lymphatic glands, the serous membranes, or any organ of the body.

Mr. Bossy, in reference to the inquiry of Mr. B. Cooper, remarked, that Dr. Baly had correctly described the scrofula developed by imprisonment as tubercular cachexy. It showed itself by paleness, weakness, and general debility of the frame; and these were so marked that he (Mr. B.) could, in examining a number of men, easily determine which of them had been subjected to imprisonment. Dr. Webster had remarked, that short imprisonment appeared to have a beneficial influence upon health, and this was apparently the case, for, from want of exercise, and the use of fluid diet, there would be an increase of fat. He had found, however, that the improvement in health was not real, for, upon putting these persons to labour, they were incapable of muscular exertion. There was, moreover, a loss of weight in them. These were the persons in whom, if imprisonment were continued, tubercular disease would develop itself. With respect to the prevalence of tubercular disease generally, the mortality from this cause in the hulks had been increased by a circumstance which should be mentioned. On the carrying of the Emancipation Act in 1834, the black convicts of the West Indies were sent to this country on their way to Van Diemen's

Land. They arrived chiefly in the autumnal season, and phthisis developed itself in great numbers as the effect of confinement and cold. This accounted for the large mortality for some time, from phthisis, in the hulks. The cruelty of this plan was represented to government, and was not persevered in. In addition to this, also, it might be stated, that pardon was not granted to prisoners in the hulks on account of ill health. He differed with Dr. Baly respecting the influence of prison food in the production of diarrhoea, and gave two or three illustrations in point. In one of these he traced the prevalence of this disease to soup containing a quantity of barley-husks; and, in another instance, to the bread used by the prisoners having been made of flour a quantity of which had been ground from wheat damaged by the sea, and which had begun to vegetate. In both these instances the bowel-complaint prevailed during the time the prisoners were partaking of the unwholesome diet, and disappeared on substituting more healthy food. He agreed with Dr. Webster that hot air produced catarrh, and chronic bronchitis, if not phthisis. In the Chelmsford Prison, the prisoners were taken from a cell of high temperature to stand at the cold treadmill, and were again taken to the cell. Catarrh was frequently caused in consequence. This had also occurred in other prisons.

Dr. Webster expressed his satisfaction that Mr. Bossy's extensive experience respecting prisoners coincided with the opinions he had expressed relative to the influence which particular kinds of food produced on the health of the inmates of prisons. In addition to the facts Mr. B. had stated, he (Dr. W.) might mention, that in Bridewell, although situated in a confined locality of the city of London, near Fleet-ditch and Puddle-dock, bowel-complaints, or any serious disease, had not been prevalent, notwithstanding the prisoners were not allowed to take regular outdoor exercise. Generally speaking, the men were employed on the treadmill, and the women in picking coire, but their food was of good quality, and the bread excellent; indeed, it could not be purer, as the corn was ground in the prison, and baked at the house of Occupations, with yeast also made on the premises. He (Dr. W.) was likewise gratified to hear that Mr. Bossy entertained the same opinions with himself respecting the ventilation of prisons, and the injurious influence which the breathing of hot dry air had in producing pectoral

disease among the inmates. Having stated in the previous remarks he (Dr. W.) had taken the liberty of offering to the Society, that a large proportion of the prisoners recently pardoned at the Penitentiary were discharged on account of being affected with phthisical symptoms, he would now ask Dr. Baly whether any of these patients had subsequently recovered; for if such were the case, the fact would show that their residence in prison tended materially to produce consumption. With reference to the lunatics sent to Bethlem Hospital from the Penitentiary, it must be satisfactory to Dr. B. to hear, that during last year four individuals formerly under his care in that prison had been cured, and removed from the hospital by warrants of the Secretary of State.

Dr. Baly replied, that in a great number of cases of phthisis at the Penitentiary, apparently hopeless, the disease was immediately checked on the release of the prisoners, many of whom entirely recovered; a favourable change took place almost immediately they were informed of their probable change. These cases showed, in a remarkable manner, the influence of mind on the progress of disease. Mr. Bossey had, in some degree, misunderstood him with reference to the causes of diarrhoea and dysentery, which he admitted might occasionally be produced by impure food. But when diarrhoea or dysentery were prevalent for several years, they did not then arise from diet, but were always dependent on the locality of the prison. The causes mentioned by Mr. Bossey as productive of bowel-complaints could not be always prevalent. Facts which he (Dr. B.) had referred to in his paper proved that his view was correct, for not only were these diseases found to be more prevalent at particular seasons, as in spring and autumn, but when they were epidemic in the surrounding neighbourhood. In these instances the diseases were owing to miasma.

Dr. Gregory suggested that as Dr. Baly was about to furnish other papers on the subject of disease in prisons to the Society, that much benefit would be derived, particularly in respect to age, if he directed his attention to the acquirement of tubercular diathesis in a number of persons under circumstances directly the reverse to those of prisoners. He thought soldiers offered this opposite condition. He had been struck with the origin of phthisis in the recruits of several regiments, particularly the footguards. It was a curious fact,

where many of these men, even though care-
fully examined by the stethoscope, and
found healthy, at the end of a few
months fell victims to tubercular disease.
The announcement of the result of investi-
gation into these cases in Dr. Baly's paper
would increase its value, and enhance our
knowledge of the subject.

Dr. Baly was obliged for the hint thrown out by Dr. Gregory. He was well acquainted with the prevalence of consumption among the foot-guards, who suffered from this disease to twice the extent as did the cavalry regiments. He did not agree with Dr. Gregory as to their being placed under circumstances the reverse of prisoners; on the contrary, they were subjected to several of the same injurious influences. Nothing, for instance, could be worse than the ventilation of the barracks, particularly those in Portman-street and in the Tower. There was no ventilation whatever in the rooms they slept in, and these were their sitting-rooms also. They mounted guard frequently, and were therefore frequently exposed to cold, as were prisoners. There was another cause which acted also on both these classes, and this was, the listless state of mind which resulted from their condition; and the inactive state of their bodies, both having a tendency to the production of tubercular disease. To these might be added, perhaps, their dissolute habits.

Mr. Cooper regarded the depressed condition of mind of the recruits, conjoined with their severe exercise in drilling, as a further cause of phthisis in these men.

Mr. Probert considered that the well-known indulgence of recruits — who were generally fresh from agricultural pursuits — in drinking, and their contraction of venereal disease, must have an influence in the destruction of their health.

Mr. Macilwain considered Dr. Baly's paper important in reference to the causation of disease and its amelioration. He inquired whether in those prisons in which diarrhoea was prevalent, as the result of locality, the peculiarity was in the soil, or in the ordinary matters of drainage. He made some remarks on the influence of ventilation on the function of the lungs.

Dr. Baly regarded the diarrhoea as the effect, not of imperfect drainage, but of a moist state of ground for some extent round the prison. The Wakefield House of Correction, in which diarrhoea was more generally prevalent than in any other prison of England, was situated in a hollow valley

of clay, which was often felt that it and in summer was not quite fully and this sub-soil was clayey, the surface on which vegetable character. — *Med. Gazette* for

ON MESMERISM.*

And here we think it likely is to be found the key to the *phreno-magnetic* phenomena. In our judgment, no occult influence emanates from the fingers of the mesmerist, and is transmitted, by touching various regions of the head, to the subjacent cerebral organ, exciting the same into unwonted activity; but the head of the somnambulist is touched near the region of presumed organs, and, under some circumstances, the feelings or faculties, associated in the mind of the subject with such locality on the head, are, by suggestion, excited to activity. All who have read of phreno-magnetic doings are acquainted with discoveries of hundreds of organs, just as the training of the patient in the *sleepwalking state* has stimulated the imagination, and led him to the performance of particular acts. On one occasion a gentleman, who was prosecuting experiments upon this subject, and who took our own view regarding the real nature of phreno-magnetism, remarked, in the presence of his somnambulist who was said to be ignorant of phrenology, "now we will try the organ of shaking hands," and then he placed the fingers over the region of destructiveness; immediately the hand was extended for the anticipated purpose. Ten minutes at least having elapsed, and other experiments having intervened, the operator, without a word, touched destructiveness on the opposite side of the head, and the expected result followed, the hand was again extended as before. This subject had been under the manipulations of an itinerant lecturer, who had discovered, by mesmerism, organs for climbing, swimming, excavating, dancing, and a host of others. Some of these discoveries had been made on the head of the person with whom, according to the results obtained by our friend, destructiveness was superseded by a faculty for shaking hands. Dr. Elliotson, however, says that, although much comes from suggestion, all does not, because he himself only *points* to the organs, making no contact. We refer to Dr. Darwin's case, given in a previous page, which shows that the proximity of warmth will sometimes be appreciated, even should the patient be feelingless to pricking and pinch-

ing; and, it may be that, in Dr. Elliotson's instances, the fingers radiate a sufficiency of animal heat to be recognized. Supposing all to be genuine, there is, in some such view of the matter as this, a rational explanation, at any rate, without resorting to the theory of occult influence, or animal magnetism. But again, we are told that results proving mesmero-phrenology have been obtained, where the patients knew nothing either of mesmerism or phrenology, and where, consequently, touch or approach could convey no suggestion. It may be so; but, for the reasons afforded for our skepticism on some other points, we cannot take it upon the evidence. If we had not already extended our remarks so far, and if we did not imagine that our readers would by this time have become somewhat impatient of further detail, we think that we could exhibit a possible source of fallacy in these pretended cases.

In admitting a reality in many of the facts of mesmerism, though rejecting, as unproved, the theory of animal magnetism, we do not offer to explain the rationale of their production. We believe the *modus operandi* to present no uniformity, and to be as yet incapable of a definition that will always apply, just as it is with corresponding affections arising from internal causes. Nevertheless, we conceive the matter to be, as well stated by Dr. Holland in his 'Medical Notes and Reflections,' that "there is no well-authenticated fact making it needful to believe that an influence is received from without, beyond those impressions on the senses, which are capable, according to the temperament and other circumstances, of exciting disordered as well as healthful actions throughout every part of the nervous system, and especially in the censorial functions." In some instances, the effective antecedent may be a species of fatigue caused by monotony; in others, it may be some unwonted impression on the mind; in many, it may be that sort of mental contagion, sometimes called *imitative sympathy*, well-known to all practitioners who have seen hysteria epidemic in the wards of an hospital, and illustrated to its greatest extent in the history of the dancing mania. In conformity with this latter view, we have been struck with the fact that when and where, in mesmeric investigations, there has been no extended or popular acquaintance with the topic, it has been exceedingly difficult to get a *good subject*; but that, when mesmerism has been seen and heard of by almost every one, subjects in abundance are gained by every experimenter. Thus, in the account of Dr. Sigismund's case, adduced near the commencement of this article, the passages we have marked in italics, exhibit the interest that attached to the topic from previous conversation. We cannot, however, pursue this theme,

* Brit. and For. Med. Rev.

We shall not go into any lengthened discussion, respecting the application of mesmerism to the treatment of disease, because, in the first place, we have already attained our permitted limits; and, again, because our object has been rather to examine the validity of reported facts and prevalent theories, than to consider mesmeric doctrines in their practical application. This we hope to have an opportunity of doing hereafter. A very few words must suffice on the present occasion. We must be pardoned if, in the first place, we express our own conviction that, to the great bulk of the reported cases under this head, no importance whatever is to be attached. Every system of quackery that has infested practical medicine from the days of the Asclepiades down to our own times has been supported by abundant proof of this kind; and every individual empiric will boast his successes. We have no superior evidence in favour of the mesmeric cures.

Patients afflicted with certain forms of chronic disease, especially if associated with, or dependent upon defective tone of the nervous system, or depression of spirits, will, it is well known, often recover more rapidly under pleasing stimulation of the imagination and hope, than by treatment which occasions no grateful excitement. Mr. Greenhow, in his published account of Miss Martineau's case, regards the amelioration in the local affection as "the natural sequel of progressive improvement begun in, or antecedent to, the month of April," two months before the employment of mesmerism; this latter, however, he evidently considers to have been conducive, in some degree towards relieving the concomitant symptoms of nervous distress, as by a happy coincidence, it was employed just as "the time had arrived when a new and powerful stimulus only was required, to enable the enthusiastic mind of the patient to shake them off;" and thus we take the employment of mesmeric agency to be — purely subjective — in most of the reported examples of its curative power. Some sorts of epilepsy, hysteria, neuralgia, anomalous spasm, chronic dyspepsia, and the like diseases, seem to yield most readily, according to the published accounts, under its use. Sometimes, it may possibly influence certain forms of nervous disease by counter-stimulus, inducing a new and less hurtful condition, and one which may supersede that for which it has been employed: this we advance as a mere suggestion; but, even in this point of view, we suspect its application must ever be limited, from the difficulty of obtaining the artificial state in question, with the great majority of persons. For this latter reason, we fear that operative surgery will never receive extensive benefits from its practice, and that the experience of Madame Plantin, of Wombwell, and some others, will ever continue extraordinary cases.

We ourselves have failed to obtain any advantage from mesmerism in several instances

where we have employed it, and where we had thought there was room for a fair trial. In our own cases, however, we were careful not to say anything to the patient explanatory of the proceeding, nor did we allude to it as a curative means; and this circumstance suggests a probable cause for the total absence of success.

Were we, however, as a profession, generally disposed to confide in the more rational accounts of mesmeric therapeutics; as we go on, the same shocks to common sense come upon us here, as elsewhere in this inquiry; and then we are thrown back, once more, upon incredulity. Thus we have Mr. Newnham stating, in his recent book, that "In the treatment of many persons together, the magnetisation of trees, or other inanimate substances, may be useful: and the facts are not inconsistent with the general laws of magnetism." We have, moreover, scientific and erudite men gravely proclaiming somnambulists to be the surest prescribers for diseases, and maintaining that practitioners should hold them in readiness, as guides and directors in the management of obscure cases: and the British metropolis contains at least one physician who indulges in these lamentable extravagances! Of Dr. Elliotson we would not speak but with unfeigned regard. He has our sincerest esteem for the services he has rendered to practical medicine; and, beyond his high qualifications as a physician and scholar, there is a boldness and directness of purpose in his proceedings which we love to see. He, himself will not respect us the less, because we decline to follow him blindly, or any other individual, however estimable.

We have accomplished our task. We have striven to realize the intention expressed at the outset of this article, and have, to the best of our ability, given to mesmerism a fair, candid, and certainly unprejudiced consideration. In the prosecution of this design, we have been swayed by no fears that we might bring upon ourselves the wrathful stripes of the more ardent and enthusiastic of its votaries; nor, on the other hand, have we dreaded the ridicule of some of our brethren, in declaring a full belief in the reality of some of the facts, often set down as sheer delusion or imposture; nor been anxious to gain for ourselves that species of security often anticipated by those who cautiously take the *via media*. We have examined the subject purely as a matter of evidence, qualified by our own observations and reflections; and, in taking leave of the subject, we shall briefly recapitulate the conclusions at which we have arrived.

We conceive, then, that making abstraction of all the roguery and deceit so prevalent in mesmeric proceedings, there is a reality in some of the facts; that these consist of certain forms of nervous disorder often arising spontaneously under the vague designations of hysteria and somnambulism; that in these, when induced by mesmerism, there is no speciality except in

the mode of their origin; and that they are brought about, not by any distinct agent as implied by the term *animal magnetism*, but by peculiar impressions made on the organs of sense and the inward consciousness. We conceive, moreover, that whilst we may fairly speak of mesmerism as a new *art*, evidence is wanting to show that it is a new *science*, involving any principle hitherto unknown. For the same reason, defective proof, we reject the reported phenomena, implying the receipt of intelligence through any other media than the customary organs of sense; although, in our judgment, it were better calmly to investigate these alleged marvels than rudely to deride them. This is a principle of action by which we have ever been guided. We hold ourselves in readiness to witness and candidly to examine any novel fact that may come in our way, as we believe our minds to be open to conviction on satisfactory evidence being adduced; and, whilst we have at all times pursued this method ourselves, it is the one we would, in conclusion, earnestly recommend to our readers.*

NEURALGIA — INTRODUCTION OF MEDICATED FLUID TO THE NERVE.

By Mr. RYND.

(Reported by Mr. Richard Gregory.†)

Margaret Cox, *ætat.* 59, of spare habit, was admitted into hospital, May 18, 1844, complaining of acute pain over the entire of left side of face, particularly in the supra-orbital region, shooting into the eye, along the branches of the portio dura in the cheek, along the gums of both upper and lower jaw, much increased in this situation by shutting the mouth and pressing her teeth close together, and occasionally

* Since the above was in type, we have been much gratified by perusal of an article on mesmerism, in the last (February) number of *Blackwood's Magazine*. The author of the paper has evidently given to the subject much consideration, as well as some personal investigation. He examines the entire question, free alike from the shallow contempt of one party, and the preposterous credulity of the other. A truth in mesmerism is recognized, however commingled with error and absurdity; and the attempt at its discovery is judiciously made. The production very naturally commends itself to our approval, as some of the writer's views and conclusions coincide very much with those to which we have ourselves come; but, independently of this, there is a soundness in the whole tone and spirit which communicates to it an uncommon degree of excellence. Certain *physical* objections to the possibility of clairvoyance are put in a manner at once striking and novel. We strongly recommend the article to the attention of our readers.

† Meath Hospital and County of Dublin Infirmary.

darting to the opposite side of the face and to the top and back of her head. She states that about six years ago she fell from a wall, and, in the act of falling, a stone struck her in the temple; that twelve months after this she was much exposed to cold, and one night was suddenly seized with the most agonizing pain in the situations above described. "She thought her eye was being torn out of her head," and her cheek from her face; it lasted about two hours, and then suddenly disappeared on taking a mouthful of ice. She had not had any return for three months, when it came back even worse than before, quite suddenly, one night on going out of a warm room into the cold air. On this attack she was seized with chilliness, shivering, and slight nausea; the left eye lachrymated profusely, and became red with pain; it went in darts through her whole head, face, and mouth, and the paroxysm lasted for three weeks, during which time she never slept. She was bled and blistered, and took opium for it, but without relief. It continued coming at irregular intervals, but each time generally more intense in character, until at last, weary of existence, she came to Dublin for relief.

She had been salivated three times, and had been so much in the habit of taking iudandum that latterly half a drachm, three times in the day, had no effect in lulling the pain, and was the quantity she commonly took. She was a miserable, sallow-complexioned looking creature, had been sleepless for months, and her face was furrowed with constant pain.

On the 3d of June a solution of fifteen grains of acetate of morphia, dissolved in one drachm of creosote, was introduced to the supra-orbital nerve, and along the course of the temporal, malar, and buccal nerves, by four punctures of an instrument made for the purpose. In the space of a minute all pain (except that caused by the operation, which was very slight) had ceased, and she slept better that night than she had done for months. After the interval of a week she had slight return of pain in the gums of both upper and under jaw. The fluid was again introduced by two punctures made in the gum of each jaw, and the pain disappeared. After this the pain did not recur, and she was detained in hospital for some weeks, during which time her health improved, her sleep was restored, and she became quite a happy looking person. She left the hospital on the 1st of August in high spirits, and promised to return if she ever felt the slightest pain again. We conclude she continues well, for we have not heard from her since.

CASE II. — R. Dolan, *ætat.* 28, a thin spare man, of middle stature, was admitted into hospital 9th September, 1844, and came under Mr. Rynd's care on the 10th of November, complaining of acute pain in the right hip, thigh, and leg, to the sole of the foot, along the entire course of the sciatic nerve and its branches, but chiefly in the main trunk of the nerve.

He is unable to sleep from the pain, and quite unable to walk. He is much emaciated, and the muscles of the limb are attenuated and wasted. He has been ill for three years, during which time he has been almost always confined to bed. He has been frequently treated for the disease with calomel, to produce salivation, cupping, blistering, leeching, &c., all without any salutary effect. Exposure to cold and wet is assigned as the cause of the disease.

On the 13th of November the fluid was introduced, ten grains acetate morphine to the drachm of creosote, one puncture behind the trochanter, and one half-way down the thigh. He was instantly relieved from pain, and walked steadily through the ward without any pain or difficulty; before, walking increased the pain. For about half an hour after the operation he felt uneasiness from the puncture.

16th. Says he is perfectly well in the thigh, and feels only a slight pain in the course of the anterior tibial nerve. The fluid was again introduced to-day to the seat of pain by two punctures; it disappeared as before.

29th. Says he is perfectly well; has walked every day since; has slight stiffness in the knee from previous want of use.

Ordered: Camphorated oil to rub the knee with.

December 15th. Left hospital to-day, saying he felt perfectly free from all pain and uneasiness.

February 6th. He walked up to Dublin to-day (twenty miles), and says that since the last operation, on the 16th of November, he has never felt his old pain, and is perfectly well.

Additional Testimony.

GENTLEMEN — I observed in the *Medical Press*, March 12, two cases of neuralgia, treated by Mr. Rynd in the Meath Hospital, by a new method of introducing morphine and creosote to the nerve affected; the result proved most satisfactory. It had been my intention long since to have sent you an account of some cases treated by me during last summer in a similar manner, and with most happy results, but much occupation this winter prevented my doing so. I hope, also, on a future occasion, to send you some cases of other diseases, such as dyspepsia, whooping-cough, &c., treated with proto-iodide of silver — a remedy I believe hitherto little used.

Case. — Last summer, an elderly female, much emaciated, and with countenance indicative of much pain and suffering, was sent up by her medical attendant from the country for the purpose of sea-bathing. She had had severe neuralgia of the nerves on outer side of leg, shooting from her knee to her ankle and foot. She had been subjected to a variety of treatment, such as leeches, blisters, an incision down to nerve, and cutting it across, &c. She was quite lame when I saw her, and it hurt her much to put her foot to the ground; she suffered greatly at night, and could not sleep. She

had been here some time, and had bathed without any benefit. I made several small punctures along the course of the nerve affected. I used a common lancet, armed with morphine, mixed in a little water, about the consistence of paste, and operated precisely as is done in vaccinating an infant; I did not use creosote with it. She felt slight stinging and uneasiness for a short time after, but that night she slept well, and next day stated that the pain, with the exception of one or two spots, was quite gone. I punctured in these places again. She again recovered.

On inquiring from her friends a short time since, I heard she has continued in good health ever since — a period of nearly nine months.

I adopted the same mode of treatment in a case of sciatica with similar success. In another bad case of neuralgia in the foot and leg in a man who had been subjected to a variety of most active treatment in hospital, and with very little benefit, I determined on using creosote *without morphine*. I had not heard of its being used before until I read of it in the *Press* as used by Mr. Rynd, but in his case he mixed it with morphine. It was of decided benefit in my case, and the man has been able to go to his work, and has continued well to this time — a period of about seven months.

As neuralgia is a disease that so frequently baffles the skill of the physician, I think it is not unworthy of the profession to give this mode of treatment a trial, and I should much like to know whether it has as yet been much adopted.

I beg to remain, gentlemen,
Your obedient servant,
ARTHUR GUINNESS.

Dublin. Med. Press.

MEDICAL MANSLAUGHTER.

We copy, says the *Dublin Medical Press*, the following from the *Norwich Mercury*. This is the second case, within a short time, in which the bowels of unfortunate women have been torn out by "laeiful" practitioners in England:

"For some weeks past suspicions have been awakened in the village of Cossey, that the wife of a carpenter named Samuel Lovett, had died in consequence of the ignorance and ill-treatment received from her medical attendant. It appears that about eighteen months or two years since, a person named Raymond Gaches, of whose previous history nothing was known, arrived in the village, and with his wife and child took up his residence, and commenced a practice which was confined to the villagers of Cossey. On the 19th January last, Jane Mary Lovett, the wife of a carpenter, and the mother of five living children, feeling herself near her confinement, sent for the assistance of the above person, who immediately attended, and remained until the birth of a female child, which took place about an hour after his arrival. Circumstances, however, subsequently transpired

in connexion with the treatment of the patient, which excited the surprise of the midwife and other females present, that induced them to suspect that either gross ignorance or criminal inattention had been manifest in the treatment pursued towards the woman. These suspicions were verified by the death of the patient, which took place about two hours after the birth of her child. A statement made by Gaches at the time relative to the cause of death served to allay the suspicion that all was not right, and the body of the woman was consigned to the grave, where it quietly rested until Friday evening, when suspicions were again awakened and information forwarded to Mr. Pilgrim, the county coroner, by whose directions the body was disinterred, and a respectable jury empanelled to investigate the circumstances attending the death of deceased. The proceeding excited the greatest interest in the neighbourhood, and the inquest was attended by a large number of the principal medical men in the city. The jury assembled at the White Hart public-house, and after a *post-mortem* examination had been made by Messrs. Crosse and Francis, a number of witnesses were examined. The accused attended the inquiry, which lasted several hours, and was permitted to put any questions he wished to the witnesses by means of the coroner. He maintained the utmost composure throughout.

"The first witness examined was Mrs. Anne Cannell of Cossey, who deposed that she was well acquainted with the deceased, having known her for many years; had been a midwife for four or five years, and on Sunday, about five weeks ago, was sent for to attend deceased; Mr. Gaches, was also sent for, and came soon after. The deceased grew worse, and Mr. Gaches went up stairs to her; she was going on very well; there was, she thought, some little difficulty from what Mr. Gaches told her; deceased was delivered safely of a female child; did not think she was going on well after the birth of the child; she was the mother of nine children; thought afterwards it was necessary to get other assistance, but Mr. Gaches said he did not think that any other doctor could do more than he was doing for her; he then said let her rest a little time; Mrs. Lovett then said she wished very much to see her husband, to whom she said she thought she was dying; had heard her say the same when she was in labour on previous occasions; did not hear Mr. Gaches say at this time there was any danger or difficulty; Mr. Gaches was with the deceased some little time before the birth of the child; considered the means used were similar to those used by other surgeons; Mr. Gaches seemed kind and attentive to the deceased; after he had left, told deceased's husband to go for him again. The other portion of this witness's evidence is wholly unfit for publication.

"Honor Mortar gave similar evidence, and deposed that Mr. Gaches was asked whether

he thought it proper to have another doctor, when he replied, he thought if there was a room full they could not do more than he was able to do; could not say there was any fault in Mr. Gaches; did not see any unnecessary violence used; remarked to Mrs. Cannell that from certain circumstances she mentioned she never saw an instance of the kind before.

"Many Anne Money examined—The deceased is my daughter; she was taken ill on Sunday morning, the 19th of January; I went to her first, it was about ten o'clock; I knew she was in labour; Mr. Gaches was sent for; he came instantly; my daughter was upstairs with Mrs. Mortar and Mrs. Cannell; Mr. Gaches was below stairs for about a quarter of an hour, and then went up with me; my daughter was delivered of a child a little after two o'clock; I was in the room when the child was born; I did not consider she had a bad time; I thought she was not so faint and exhausted as I have seen her many times on former occasions; I was on the bed by the side of my daughter; I think about two hours after the birth of the child I saw Mr. Gaches use great exertion with my daughter; I made no observation at that time to Mr. Gaches, but mentioned it to him since; the consequence attending that treatment was very different to what I had ever seen before; Mr. Gaches never intimated to me my daughter was in any danger; immediately after the treatment I had remarked to be unusual, I saw a change in my daughter, and then I suspected she was not going on so well; Mr. Gaches told me on the Sunday, about half an hour after the death of my daughter, that it was a false conception; this I did not understand; on the Monday morning, the day after my daughter died, Mr. Gaches called on me and said he had found it out, it was a tumour weighing 3lbs. and 3oz.: I asked him then what he was going to do with it, and he told me that he had put it into spirits, and intended to take it to Mr. Crosse of Norwich, directly, which I thought he had done until last Sunday, and then there began to be a stir in the parish respecting this tumour or substance, and till then I considered Mr. Crosse had had it: I thought Mr. Gaches left in a hurry when he took the substance away. Other portions of this witness's evidence are also unfit for publication.

"The jury, after a few minutes consultation, were unanimous in returning a verdict of 'manslaughter.' The coroner then directed the two constables present to take Mr. Gaches into custody, and to be very careful in not permitting him to escape. This caution was also urged by several of the jury. The verdict was not returned till nearly five o'clock in the evening, when on the intimation of his arrest the prisoner requested to be allowed to see his wife and family, and endeavour to arrange with his friends for his bail, as he could have that to any amount. He hoped that the coroner's warrant of committal to the county jail

might not be enforced that night; but on the contrary, that he might be permitted to remain in the custody of the police till the following morning, offering at the time to defray any expense that might be incurred in consequence. This course he hoped would be adopted, as it was his intention to go before the magistrates at the Shirehall the following morning in order to ascertain what bail they would require.

"The coroner stated his willingness to acquiesce in the demand, and instructed Inspector Barrett, into whose custody the prisoner had been given, to take great care of the prisoner, and obtain any extra assistance he might consider necessary for the purpose.

"The parish officers were then bound over to prosecute, and the witnesses to appear at the trial. These precautions, however, are likely to prove futile, for the prisoner *managed to make his escape!*"

CAOUTCHOUC AS A REMEDY FOR TOOTH-ACHE.

Caoutchouc becoming very smooth and viscous by the action of fire, has been proposed by Dr. Rolfs as an excellent remedy for filling hollow teeth and alleviating the toothache proceeding from that defect. A piece of caoutchouc is to be put on a wire, then melted at the flame of a candle and pressed, while warm, into the hollow tooth, and the pain will disappear instantly. The cavity of the tooth should first be cleaned out with a piece of cotton. In consequence of the viscosity and adhesiveness of the caoutchouc, the air is completely prevented from coming into contact with the denuded nerve, and thus the cause of the toothache is destroyed. — *Braithwaite's Retrospect.*

PHYSIOLOGY NOT UNFRIENDLY TO RELIGION.*

Let, then, the physiologist carry his researches to the utmost limits of science: let him (to shift our illustration from the animal to the vegetable world), let him show us the first movement of vitality in the germ of that tiny seed, and the chemical laws by which it is governed — how its sprouting organs seek each their element of earth or air, and absorb the appropriate material of their growth — let him analyse the very sunbeam that awakens and stimulates those vital actions, and display the curious fact, that it is the yellow ray of light which presides over the digestive process, while the blue ray is the excitor of its motive forces; and so far from feeling jealous of the tendency of his in-

quiries, we will hail with delight the triumphs of his genius and skill. But it surely is competent to inquire, whence sprang that mysterious vital force which moulds those perfect organic forms, and which cannot be inherent, of itself, in that little mass of starch and gum, which compose the vegetable germ. Who impressed upon it those wonderful and perfect laws, by which it seeks its food, — decomposes and converts it into sap, secretes the solid organs which form the leaf, the flower, the fruit, — parts the very beams of light into their primitive colours, seizes upon certain rays, and sends the others forth upon errands of utility or taste. And it is surely a legitimate conclusion on the strictest principles of inductive science, that these amazing phenomena are the product of intelligence, wisdom, and power, which immeasurably transcend the conception of finite minds — or, in other words, are infinite. Thus it is that the awakened intellect, in its inquiry into the ultimate causes of things, finds no settled repose; till it reaches and rests upon the scriptural doctrine of an intelligent, self-existent, and infinite God.

Thus far we have argued on the supposition of the existence of a germ, endowed with vitality, and governed by laws which provide for the development of all the individual organic forms, and for the reproduction of the species. Let us now, for a moment, push our inquiry a step higher, and interrogate philosophy, for some plausible account of the *first origin* of those germs, or ova, which evolve the forms and forces of physiology, without the admission of a God.

There are but three distinct theories, which have been devised for the purpose.

The first, is that chiefly elaborated by Leucippus, Democritus, and Epicurus, among the Greeks, and adopted under various modifications since. Divided, as its advocates have been, as to many subordinate questions, they all agree in regarding the whole phenomena of the universe, including those of life and reason in their highest forms, as the result of *fortuitous combinations* of unconscious, unintelligent material atoms.

It is hardly necessary to say, that, in the first place, this theory leaves us wholly in the dark as to the origin of these material atoms, endowed with the capacity of producing such magnificent results: and, in the second place, so far from explaining those results, it involves them in still deeper mystery. The whole

* From Rev. Dr. Hope's Discourse, 1845.

analogy of nature teaches that chance is the parent of confusion, and not of order, and, least of all, of such perfect order as the universe everywhere displays. "If," says one, "you throw a fount of types upon the floor, some of them might, *by chance*, spell a syllable, or possibly a word; but never a sentence, and much less a book." The rude, unshapen rock *might* be the product of *chance*, but the exquisite mechanism of the human frame *never*. The very term, chance, implies essentially the absence of design; and, therefore, to explain the magnificent designs of the universe, by the doctrine of *chance*, is a clear contradiction in terms. It is unnecessary to enlarge upon the absurdity of supposing such phenomena as thought, emotion, or moral sentiment, to be the result of any known or conceivable properties of matter.

The second atheistic hypothesis, is that which teaches the existence of matter, and the succession of living things, according to the laws of nature, just as they are at the present time, from all eternity. This was the oldest and most popular creed of the Hindoo, and some Grecian, schools of philosophy. We might justly remark, that this theory professes to explain nothing. It only buries the evidences of design, which we everywhere behold, in the dark and unsearchable depths of a past eternity. But farther, the progress of knowledge has shown that the theory itself is untrue. The geological records of the globe, if we may credit that science, carry us back to a period in its history, when the present races of living beings had no existence. It is as well ascertained as any conclusion of modern science, that the world and its present living races have not existed from eternity, by the reproductive laws of nature; but were created since the beginning of time. And there is probable philosophical evidence, that they will be finally destroyed; or, at least, their physical condition completely changed. There is no time to state more fully the grounds of this conclusion; nor is it necessary, as we believe the opposing hypothesis is wholly abandoned.

Driven by the light of advancing knowledge from these strong holds of ancient philosophy, skepticism has taken refuge and made a last stand in the modern hypothesis, which attributes the existing condition of the universe to an inherent law of *gradual development*. Thus La Place conjectured (and the conjecture has become the popular hypothesis of astronomers), that the matter of the universe existed originally in a diffused and nebulous state, and by gradual condensation became the solid bodies of the solar system. Now supposing the existing laws of matter to account for this condensation, and the consequent spherical shape of these bodies, yet the origin of this nebulous matter endowed with such properties is the great mystery; and besides there is no property of matter, and no law of mechanics, as Newton has shown, which will account for the origin of these bodies, and especially of the

comets, in their present orbits. We need a Creator, therefore, just as much as ever (even if this theory were true, which is yet to be demonstrated), to originate the matter of the universe, and to lead forth the celestial bodies in their beautiful and perfect courses.

The physiological sequel to this hypothesis, is, that this inherent law of development at length evolved from matter, organic life, in a low and feeble form, from which by gradual approximations it finally reached the perfection of the human species. One noble philosopher imagines he has clearly traced our pedigree as far back as the monkey tribe; and another, with bolder analysis, fancies he has detected our proud original in the oyster genus.

Were it not that some names of high repute are found among the advocates of this hypothesis of gradual development, we should not expend upon it here, a single sentence of sober argument. As it is, we shall only stop to say, that it does not in the least affect the argument for an intelligent first cause. And farther, that the hypothesis, so far as it relates to physiology, is contradicted by all our knowledge on the subject. It is a settled law of the animal kingdom, that there is no such thing as a transmutation of one species into another. Not only has it, never been known to occur, but it is known to be impossible, without a *fundamental change* in the law of reproduction. If there be any one fact established in natural history, it is that the law of reproduction has no element of gradual development, but provides for the most rigorous sameness, in all that is peculiar to its type, and that no new species has ever been originated, by any known natural law whatever. You may indeed produce a mongrel by the commixture of two contiguous species of the same genus, but even that cannot perpetuate its species. This whole hypothesis is overthrown by the established facts of true science.

Thus it is, that the mature inductions of sound philosophy correct the crude hypothesis of science falsely so called, and coincide with the true doctrines of Revelation. And we have not the shadow of a doubt, that it will be so to the end; and the last crowning induction of a perfect universal science, will be just what Newton has stated in the closing Scholium of his immortal Principia, that the great first cause of all the phenomena of the universe must be, and can be no other, than an intelligent, self-existent, and infinite God.

POISONING BY HYDROCYANIC ACID.

To the Editor of the Medical Gazette.

Sir, — If you think the following memoranda of a case of poisoning by hydrocyanic acid worth a place in your journal, you will, by inserting them, oblige, your obedient servant, CHARLES POOLEY.

On the evening of the 23d of January, I was summoned to the aid of Mr. H., a medical gentleman of Stratton, near Cirencester, who was reported to have poisoned himself. I found him lying on his back on the hearth-rug, his head supported by a folded shawl. His countenance was placid and free from all contortions, his eyes closed, and the pupils not largely dilated; a fresh healthy colour was on his cheeks. His limbs were quite supple and his body warm. Life had been extinct about ten minutes. From the statement made to me in the room, and which afterwards appeared in evidence at the inquest, I learnt that he had returned home from a long round of visiting, much fatigued, and feeling a pain in his chest, took the bottle of acid from its place in the surgery, and went into the parlour adjoining for the purpose of taking a minim dose to relieve it — a remedy he had more than once had recourse to before, for the same purpose. While there he was heard to stagger, and as the housekeeper rushed into the room, he fell, and an ounce-phial, about half full of hydrocyanic acid, of Scheele's strength, corked, dropped from his hand. She rang the bell violently, and gave the alarm, and in five minutes his brother, who is a medical man, was on the spot. He was then breathing, and his pulse was distinctly perceptible at the wrist. Notwithstanding every means was tried to counteract the effects of the poison, he expired in a few minutes without any scream, and quite tranquilly.

An inquest was held on the body, and I was directed to make a post-mortem examination.

Appearances twenty-two hours after death. — Weather very cold. The body was cold and rigid. All the depending parts, as the back, shoulders, bend of elbows, &c., were of a mottled purplish colour. On opening the chest the right lung presented a dark dusky purple appearance, was not much collapsed, and contained air. On being cut into, a frothy, dirty-brown, semi-mucous fluid exuded, tinged with blood. There was no odour of prussic acid from it. In the cavity of the right pleura were about eight ounces of thin serum; the surface of the pleura was not marked by any evidence of inflammation. The left lung was of a pale colour, quite exsanguine, contained but little air, and poured out only a whitish frothy mucus on being cut into; it was firmly adherent in its whole extent to the costal pleura of the same side, and posteriorly the adhesions were so strong as to defy my strength to separate them. The pericardium was natural; it contained perhaps a little more fluid than usual in its cavity. The heart was small and firmly

contracted, and the vessels on its surface distended with fluid blood. On cutting into it about three ounces of dark coloured fluid blood trickled out without the least appearance of coagulation having been attempted. It exhaled no smell of prussic acid. The parietes of the ventricles were a little thicker than usual. The liver was large and healthy. The spleen soft and easily broken down, resembling mulberry jam. The kidneys were firm, rather large, and slightly coagulated. The stomach contained about fifteen ounces of half-digested food, that gave out the peculiar smell of food undergoing digestion, with which also could be satisfactorily recognised the well-known odour of bitter almonds. The mucous coat of the stomach was healthy, and smelt strongly of prussic acid after the stomach had been emptied of its contents. The intestines were healthy. The brain and its coverings were healthy, but its vessels and its sinuses were filled with dark-coloured fluid blood. It was quite free from any smell of prussic acid.

In this case, 1st, he had power to cork the bottle after having taken the poison; indicating its paralyzing effects on the sensorium not to have been instantaneous. 2d. The placid state of his features, unmarked by any act of expiring. 3d. There was no scream, but he died tranquilly and silently. 4th. The congested state of the right lung might more reasonably be referred to the effects of chronic pneumonia than to the poison. 5th. The blood was everywhere dark-coloured and fluid. 6th. The odour of bitter almonds was satisfactorily recognised in the stomach, and nowhere else. 7th. He lived nearly ten minutes after having taken the poison.

CASE OF POISONING BY PRUSSIC ACID.

Communicated by Mr. Hicks and Mr. Waterworth.

On Friday, the 21st of March, Mr. Hicks, of High Street, Newington, was sent for in great haste to see a person who was stated to have been suddenly taken seriously ill. On his arrival, he found the patient to be a female about 22 years of age, and of small stature; she was lying on her back perfectly insensible, the teeth clenched, foaming at the mouth, and the face so greatly congested as to be almost purple; the breathing was slow, laborious, and at long intervals, the pulse gone, and the action of the heart but feebly to be felt; the eyelids were partly closed; and the eyes appeared as if pushed forward between them, while the pupils were dilated, and quite insensible to the stimulus of light; the whole body was under such strong spasmodic action,

that the head seemed buried between the shoulders, and the arms nearly turned round by the action of the pronators. There was neither emprosthotonos nor opisthotonos.

Such were the symptoms as nearly as he can recollect; and from the bloated state of the countenance, together with the foaming state of the mouth, his first impression was that the girl was labouring under some form of epilepsy;* but upon finding the patient pulseless, and the heart scarcely to be felt, he naturally looked for some other cause; when he found, upon inquiry, that the symptoms had come on directly after taking a dose of medicine, which he ascertained by tasting and smelling to contain prussic acid. This led him to the conclusion that the symptoms were produced by an overdose of that medicine; and in conjunction with Mr. Watson, a medical gentleman whom he found at the house upon his arrival, he resorted to the means recommended in such cases — such as cold affusion to the head, applying ammonia to the nostrils, and endeavouring to give brandy and ammonia internally. As, however, the muscles of deglutition were so fully under the influence of the poison, it is doubtful whether more than a small quantity passed into the stomach, notwithstanding every means was used, by irritating the fauces, to stimulate the muscles to action. Their efforts were, however, perfectly useless, as the breathing became gradually slower; and in less than ten minutes after their arrival the patient died, — death appearing to be caused by the perfect inability of the sufferer to inspire, from the muscles of the chest, as of every other part of the body, being under strong tetanic spasms; the natural consequence being extreme congestion of the brain and lungs.

On making inquiries of the father, who was present at the time the medicine was taken, it appears that no sooner was the liquid swallowed, than the girl, who had been previously sitting, started up, throwing her hands over her head, uttering at the same time a loud gasping sound, *but no scream or shriek*; she stood still for a second or two, then running forward about two yards, fell with her head first to the ground; after which she never moved, but continued to make a sort of moaning noise for five minutes. The respiration was accompanied by a sound very much resembling that observed in laryngismus stridulus. The

ribs appeared to become fixed by a sudden tetanic spasm of the muscles. The time which elapsed between the taking of the liquid and death was *twenty minutes*. The deceased died ten minutes after the arrival of Mr. Hicks.

Post-mortem appearances. — At *sinety* hours after death (or nearly four days), the body was examined, when the following were the appearances presented. Externally there was great lividity, the teeth firmly clenched, and there was foam about the mouth.

Head. — The dura mater and sinuses were much congested, and the whole substance of the brain was dotted with blood, which was fluid and exceedingly black. Ventricles empty; no odour of prussic acid in this cavity.

Thorax. — The lungs were much congested, otherwise healthy; heart small, and of feeble power; the right ventricle slightly dilated, but the valves healthy; the whole organ was filled with blood, which was perfectly fluid, and of a very dark colour. The odour of prussic acid on opening this cavity was very evident, not so much from the smell as from the sense of constriction produced in the fauces.

Abdomen. — The stomach contained about two ounces of undigested food, smelling strongly of prussic acid, the organ itself appearing healthy, with the exception of a small patch near the cardiac orifice, which was red and vascular. This, Mr. Hicks, however, is inclined to think was not the effect of the poison, but that it had existed for some time, as it was for some form of dyspepsia that the patient was taking medicine.

The liver was healthy, as well as all the organs in the abdomen: there was no tinge of blue about the gall-bladder, or in its contents.

The contents of the stomach being taken to Dr. Letheby, of the London Hospital, were submitted to examination, in the first place, by putting them into a retort and distilling by means of a water-bath, by which process two drachms of fluid passed over, smelling of prussic acid, a portion of which being tested by the iron test gave evidence of the poison by the formation of Prussian blue, and afterwards, by testing with the nitrate of silver, a white precipitate was produced, insoluble in cold, but soluble in boiling nitric acid; and on heating the cyanide of silver in a small reduction-tube, cyanogen was evolved, which burnt with a purple flame: these tests satisfactorily proved the presence of prussic acid.

The next point to be considered was the determination of the quantity of prussic acid taken by the deceased. From information supplied by Mr. Hicks, it appears that one half of the mixture, which was intended for a lotion, yielded on distillation and the precipitation of the distilled liquid by nitrate of silver, nine grains of cyanide of silver. In the whole mixture, therefore, amounting to four ounces, there would be a quantity of prussic acid equivalent to eighteen grains of the cyanide of silver. This

* No odour of prussic acid was perceived about the mouth, or in the room.

would amount according to the usual calculation to three grains and six-tenths of anhydrous prussic acid. The deceased had swallowed by mistake one-fourth part of this lotion: she had, therefore, taken *nine-tenths of a grain* of anhydrous prussic acid. Taking Scheele's acid at five per cent., this would be equivalent to eighteen grains, or rather less than twenty drops of Scheele's; and, on comparing it with the Pharmacopœial acid, at two per cent., this quantity of anhydrous acid would be equivalent to forty-five grains, or forty-nine drops.

REMARKS. — This is probably the most interesting case of poisoning by prussic acid which has been yet recorded. The history is in every respect complete: the poison was accidentally swallowed in the presence of a person, who was able to observe and give a good account of the symptoms to Mr. Hicks. This gentleman arrived ten minutes before the death of the deceased, and noticed for himself some of the most striking symptoms; — a complete inspection of the body was made — the post-mortem appearances were accurately noted, and lastly, the exact quantity of poison swallowed by the deceased, was was most satisfactorily determined by a chemical examination of the lotion.

In respect to the symptoms, it would appear from the father's statement, that he first heard a gasping noise, but there was no shriek or scream. This case, then, appears to put an end to the theory that poisoning by prussic acid is always accompanied by a "death-scream," or "shriek" — a subject of discussion at the trials of Belany and Tawell.† There was the slow laborious breathing at long intervals, foaming at the mouth, protrusion of the eyes, dilated pupils, pulselessness, and insensibility. Mr. Hicks states that there was no stertor; that during the convulsive fits the head and neck seemed to be spasmodically drawn down into the chest. The convulsions do not appear to have been so great as to affect the trunk. Emprostho-

* Two drachms of what was said to be Scheele's acid were put into the bottle, but the analysis proved that the acid must have been under the strength of Scheele.

† Another case of poisoning by prussic acid, without any "shriek or scream," was reported in the Medical Gazette of last week. See page 859. Mr. Hicks took especial care to ask the father as to the kind of noise made by the patient on taking the poison, and from the description he gave, it does not warrant the assumption that any peculiar shriek is made in death from prussic acid. It was a mere gasping for breath. See also a third case, Edinburgh Medical and Surgical Journal, vol. 48, p. 44.

tonos and opisthotonos were absent; a fact which may account for the want of evidence of a distorted or convulsed state of the body, with disturbance of the clothes, in persons who have been found dead in bed, and who had taken prussic acid. The most remarkable part of the case is, that the girl obviously retained volition and the power of locomotion for a short time after swallowing the dose. She was able from a sitting posture to assume the erect attitude, throw her arms above her head, and then run a short distance before she fell. When seen by Mr. Hicks she was perfectly insensible, and unconscious of everything that was passing around her. She made the same moaning noise before death, that was observed in the case of Sarah Hart.

The most striking of the post-mortem appearances were, — the fluidity* and dark colour of the blood. It does not appear that the blood had any odour of prussic acid, although this odour, or rather a *sensation* which some experience in smelling the acid instead of odour, i.e., "*constriction of the fauces*," was perceived by some of those present on opening the cavities of the thorax and abdomen. The contents of the stomach smelt strongly of prussic acid, i.e., gave a constricting sensation in the fauces, and this was observed *ninety hours* after death. In a case examined by Mr. E. Crisp, of Walworth where it is probable a considerably larger dose of the poison was swallowed, there was no odour of prussic acid in any part of the body, although the examination was made seventy hours after death.† Facts of this description show that the detection of an odour is a very uncertain attendant on poisoning by prussic acid. The term "*odour*" appears, indeed, to be improper, when applied to a sensation experienced in the throat; many can detect no odour at all in prussic acid, although they have an undefinable sensation of its presence. One point is quite certain, that those who look for an odour of bitter almonds in these cases will commonly be deceived, and pronounce the poison to be absent. It is very easy for a person who has tried some experiments on the subject to distinguish the smell of prussic acid from that of bitter almonds; but it is a question whether many do not actually seek for the smell of the latter, as evidence of the presence of the poison.

It is not a little singular that in this case, the odour of prussic acid was more distinctly recognized in the thorax than in any other cavity! Some who were present perceived it more strongly in the chest than in the abdomen, even after the stomach itself had been laid open.

The only other appearances remarked, were

* In Dr. Meyer's experiments on animals, the blood was found coagulated. Schmidt's Jahrbücher, 1844.

† Lancet, Sept. 14, 1844.

congestion of the lungs and brain. The heart was filled with blood; the aorta empty. There was no blue tint in the contents of the gall-bladder; the kidneys had a pinkish colour, and were much congested.

The most important fact which this case discloses remains to be mentioned; it settles beyond all dispute that the life of a healthy adult may be destroyed by a dose of anhydrous acid equal to nine-tenths of a grain. Dr. Geoghegan* has described a case in which a gentleman narrowly escaped with his life after having swallowed a quantity of the acid equivalent to thirty-six drops of the London Pharmacopœial acid. In Mr. Hicks's case a quantity equivalent to forty-nine drops of the same acid was taken, and the person died in twenty minutes. In a case reported by Dr. Banks, a female recovered after taking thirty drops of an acid, the strength of which is not stated.† It is, however, quite possible that a person might die from a smaller dose than that taken by the deceased in this instance, because circumstances may cause the effects of the same dose to vary in its operation on different persons. Another point worthy of remark is, that the quantity which certainly killed this woman was actually less than that which was found to be present in the stomach of the woman Hart: and yet it was absurdly attempted, in the defence of Tawell, to show that there was not enough of the poison found to destroy life! We have, then, in cases of Dr. Geoghegan, and Mr. Hicks, the clearest proof—I, that a person has recovered from a quantity equivalent to thirty-six drops of P. L. acid (fourteen of Scheele); and 2d, that a person has died from forty-nine drops of the P. L. acid (twenty drops of Scheele‡). It appears to be impossible to have the fatal dose of a poison fixed with greater precision.§ — *Med. Gaz.*

POISONING BY BREAD CONTAINING ERGOT OF RYE.

At the meeting of the Academy of Sciences on January 13th, a note was read from M.

* Dublin Med. Journal, vol. viii., p. 308.

† Edin. Med. and Surg. Journ., vol. 48, p. 44.

‡ It is here assumed that Scheele's acid contains 5 per cent. of anhydrous acid, but it is seldom found so strong as this.

§ All English medical jurists have hitherto laid it down that three-quarters of a grain of anhydrous prussic acid might be regarded as a fatal dose. When we consider the alarming symptoms produced by two-thirds of a grain in

Bonjean, in continuation of a former communication, detailing the consequences which had

Dr. Geoghegan's case (the patient having had a most narrow escape of his life), and that death has here been caused by nine-tenths of a grain, it will show that the opinion thus expressed by Christison and others, is perfectly borne out by facts. It has been objected that the dose given in the cases upon which this opinion was based (i. e., the cases of the seven Parisian epileptics), had been misstated by all English writers, and it does appear that an error has crept into every English work on toxicology, in relation to the dose which proved fatal in these instances. The error, however, is but little more than the third of a grain, as the following calculation will show:—

Each patient took a dose of sirop of hydrocyanique du Codex, containing ten per cent. of medicinal prussic acid. According to Orfila, the quantity of medicinal acid in each dose was twenty grains (French), or 16.94 grains English (Ann. d'Hyg. 1829, 507). In another report Orfila states that each patient took of medicinal acid one gramme fifteen centigrammes, or 17.75 grains English (Toxicologie, ii. 285). It will be observed that here is a difference of 0.81 grain of medicinal acid in the dose taken. Gay-Lussac, Magendie, Barruel, and Orfila, were employed by government to determine the strength of the sirop hydrocyanique du Codex; and that this was the same as that prescribed for the patients appears evident from the identity in the specific gravity and proportion of acid present (Ann. d'Hygiène, 1829, pp. 495—504). They found, by careful experiment, that ten grains (French), or 7.7 grains English, of the acid used in the syrup, gave, with nitrate of silver, 15 centigrammes, or 2.31 grains of washed and dried cyanide of silver. Thus, then, 100 grains of the medicinal acid, used in the syrup, would yield 30 grains of cyanide of silver, and this would indicate a strength of six per cent. of anhydrous prussic acid. Admitting Orfila to be correct in stating that each patient took in the dose of syrup 17.75 grains (English), of medicinal acid, this would be equivalent to 1.06 grains of anhydrous prussic acid,—a dose only a little greater than that taken in Mr. Hicks's case.

It has been stated that each patient took 2½ grains of anhydrous acid, — Devergie says 5.64 grains (French) = 4 grains English of concentrated acid: but not to mention the proof to the contrary in the above calculation, the symptoms and duration of these cases much more clearly resemble the effects of a dose of about a grain of anhydrous prussic acid, than those of a dose of two or four grains; and the mistake in the quantity has arisen probably from a calculation of what the strength of the acid ought to have been, rather than what it was found to be. Two grains and a quarter of anhydrous acid are equal to about 50 grains of Scheele, and 120 grains of the P. L. acid. Some of the

resulted to a family from the use of bread containing ergot of rye.

M. Bonjeau's letter gives an account of the autopsy of a child, aged 10 years, and who had undergone the operation of amputation about five weeks before death. The examination of the body was made by Dr. Pétrequin, principal surgeon to the Hôtel Dieu at Lyons.

The brain was healthy; the meningeal veins were much distended; but the membranes of the brain were not diseased. A dessert-spoonful of rose-coloured serosity was found in each lateral ventricle. The two inferior thirds of the right lung were in an advanced stage of pneumonia, and the remaining third in the second stage; the anterior and superficial part of this lung presented a single abscess capable of containing a hen's egg. The left lung was in the first stage of pneumonia. There were neither tubercles nor small abscesses. The liver was in a perfectly normal state.

The veins of the stumps were healthy; the arteries were converted into fibrous cords for the space of about 1½ inches from their cut extremities, but they presented no other alteration. The nerves were thickened for some distance towards the part where they had been incised; elsewhere they appeared healthy. — *Comptus Rendus*, Jan. 13th.

RESEARCHES UPON THE POISONOUS EFFECTS OF SULPHATE OF QUININE.

By M. DESIDERIO.

The conclusions deduced by the author from his numerous experiments upon animals, as well as clinical observations, are the following:—

The effects of large doses of sulphate of quinine upon the lower animals are similar in almost every respect to those witnessed in the human subject, and consist in lethargy, difficulty in maintaining the erect posture, tendency to immobility, impaired vision, falling of the eyelids.

Acetate of morphine and alcohol produce analogous effects, and if administered will consequently augment the deleterious influence of the sulphate of quinine.

On the contrary, cherry-laurel water produces an opposite effect, and within certain limits may be considered as an antidote.

epileptic patients survived three-quarters of an hour; but had the dose been so large as above supposed, it is highly probable that they would have died in a much shorter period of time. This result shows that we have in Mr. Hicks's case the smallest dose of prussic acid which has yet destroyed life; but this does not at all affect the opinion that three-quarters of a grain of anhydrous acid might act as a fatal dose, — an opinion to which we believe all toxicologists would assent.

17*

Venesection acts still more beneficially in cases of poisoning by the sulphate of quinine.

The powder of the digitalis purpurea has also appeared to exert a favourable influence in the cases referred to. — *Comptus Rendus*, Feb. 10th.

ON THE MICROSCOPIC TEXTURE OF CANCER.*

M. Desormeaux has recently published a valuable inaugural dissertation, entitled *Recherches sur la théorie élémentaire de la production des tumeurs accidentelles*, in which he has given an excellent summary of all the recent researches on the intimate structure of cancerous formations.

Müller, and (since the publication of his writings) most other pathologists, has arranged these morbid growths into two great families or groups, viz., the Encephaloid and the Scirrhus. Of the former he makes the following three subdivisions.

1. Carcinoma medullare, in which there is a predominance, in the medullary mass, of round globules over loose fibrous tissue. The globules are of various sizes; but the smallest are larger than pus-corpuscles. Each contains a granular substance or nucleus within. They are very similar, in many respects, to those of common cancer, and of reticulated carcinoma or scirrhus.

2. Carcinoma medullare, consisting of pale, elliptic, non-elongated corpuscles, and of a fundamental cerebriform mass. These corpuscles are usually twice or three times as large as the globules of the blood. There is never any appearance of fibres proceeding from their surface, and they rarely exhibit any traces of nuclei within them.

3. Carcinoma medullare with fibrated or fusiform corpuscles. This species of encephaloid structure has at times, on laceration, a sort of fibrous aspect, when the fusiform corpuscles are arranged in a somewhat determinate direction. According to the direction which they assume, the morbid mass will present a radiated or a tufted appearance. In many cases, indeed, their directions are so various that the lacerated surface exhibits no traces of fibres anywhere. The fusiform corpuscles are sometimes nucleated; at other times they contain granular points, but without distinct nuclei. They are elongated on one or two sides into fibres of different lengths. They

* Med. Chir. Rev., April, 1845.

may be considered as cells that are arrested at the period of the process of transition from the cellular to the fibrous condition.

The three forms of the disease now described may (most probably) be regarded as so many degrees or stages in the development of the same tissue; these successive stages being characterized, 1, by rounded nucleated globules; 2, by elongated oviform globules, which are either non-nucleated, or indistinctly so; and, 3, by fusiform globules.

These several kinds of globules may be regarded as so many successive epochs of evolution, through which a cell must pass before it can become a fibre. Thus we find that, in an encephaloid mass, there is the same transformation of the primitive elements as occurs in many normal tissues—with this difference only, that the process of evolution is not complete, being arrested before the fibrin is perfectly formed. There is a perfect analogy in their mode of formation. The essential element of an encephaloid tumour is the presence of cells. In some cases the entire mass is composed of them, placed one alongside of the other, but without having any perceptible bond of union; while in others, there is a network of fibrous or cellular tissue interposed between the cells. When this fibrous tissue prevails, the encephaloid then approaches its characters to the scirrhus structure. In the latter, the existence of the two elements—cells and fibres—is always more distinctly marked than in the former. The fibres are often quite perceptible by the naked eye. Sometimes they are lengthened and run parallel to each other; at other times, they form rounded capsules, within which the globules are contained. As in the case of the newly formed fibres of the cellular tissue, so those of a scirrhus formation are destroyed by acetic acid, leaving nuclei or nucleated fibres behind. The fibres sometimes exhibit at different points a sort of varicose enlargement, within each of which a nucleus is found. This appearance is often observed in fibrous tumours (not genuine scirrhus) of the uterus and other parts.

In the *reticular carcinoma* of Müller, the white network, which encloses the scirrhus globules in its meshes, is formed of round opaque granulations, three or four times as large as the blood-globules; they are occasionally agglomerated into rounded masses. The genuine scirrhus tissue, of a pale greyish colour, is composed of globules that, on the whole, resemble those of the first stage of an encephaloid formation. These globules are either round or somewhat oval; along with them we find free nuclei with their nucleoli. — (Vogel.)

From a variety of observations we may reasonably conclude that the cells of scirrhus are formed around the nuclei of which M. Vogel

speaks; their contents are at first granular and almost opaque. When the process of softening commences, the granulations disappear, the globules become transparent, and within them are formed new cells, which at first are few in number, and gradually multiply, until they entirely fill the parent cell. M. Valentin, who, in part at least, admits this account of the progress of the cells, says, that the parent cells eventually burst and discharge their contents: in this way we may account for the presence of young free cells in scirrhus formations that have become softened.

The intercellular substance seems to undergo certain modifications corresponding with the evolution of the cells; the granulations or granular points, which it often contains, usually disappear, and it becomes limpid, while at the same time the space, which it occupies, is diminished by the enlargement and multiplication of the cells.

The fibrous network does not appear to follow in its alterations the development of the cells: it may remain firm and resisting, while the cells are far advanced in their evolution. Even when a scirrhus tumour has become completely softened, this tissue sometimes forms shreds that retain their original character.

In *alveolar cancer*, the basis of the morbid tissue consists of white fibres and lamellæ, which cross and intercross with each other, intercepting between the meshes thereby formed limpid cells, either closed or communicating with each other, of various sizes, from that of a grain of sand to that of a large pea, and filled with a transparent gelatinous substance. In this substance there are cells, and these cells contain other cells more minute. The smallest of these cells exhibit at one point of their parietes a distinct dark-yellowish nucleus, and sometimes also many free and unattached granules floating within them. To this species M. Müller refers the *gelatiniform* and *areolar cancers* of Laennec and Cruveilhier. The cells of this species of the disease appear to be only an advanced or more mature degree of the cells of scirrhus. — *Jour. de Chirurgie de M. Malgaigne, Octobre, 1844.*

PROFESSOR BERUTTI ON THE SPONTANEOUS GENERATION AND NATURE OF THE SPERMATIC ANIMALCULES.*

The reproduction of certain animal and vegetable species is effected, without the intervention of any ovum, after the manner of what is called gemmiparous and fissiparous generation. Now there is a great analogy between the development of *gemma* and that of *ova*. In the former, however, all the elements, that are necessary to the production of a living being, are found contained; whereas, the latter have need of the new elements of the prolific fluid before they can become duly evolved.

* Med. Chir. Review.

Every particle of a living being — which, on being detached from its parent body, is capable of reproducing an independent living creature; does not materially differ from a bud, either in its mode of origin, or in its property of producing new individuals. Thus organic molecules, in certain circumstances, have the power of attracting to themselves new materials from surrounding bodies, which they then incorporate with themselves, and so elaborate as to form a new being. Spontaneous generation, in the opinion of Professor Berniti, consists in the exercise of this property, and differs from oviparous, gemmiparous, and fissiparous generation, in that it takes place among molecules which, in consequence of the death of the parent, have ceased to constitute a part of a living individual.

Microscopic observations have clearly shown that the globules, resulting from the dissolution of organic matter, possess an inherent activity; sometimes they approach to and unite with each other, and at other times they seem to be mutually repellant. It is not at all inconsistent with rational belief to suppose that this is the cause of spontaneous generation — an act, it may be observed, to which the concurrence of the atmospheric air and of water is probably always necessary.

The reproduction of parts of an organic body that have been excised or destroyed is effected by means of globules floating in a fluid which subsequently evaporates, leaving the globules dry; hence the cellular production and origin of new tissues. The same process of assimilation is likewise that by means of which the fœtus is formed in the maternal ovum, as Wolf and Rolando have shown.

The necessary condition, therefore, of every sort of generation, reproduction, and even of the nutrition of organized parts is invariably the presence of certain organic globules endowed with a plastic activity, and floating in a fluid exposed to the contact of the atmospheric air — which, in place of furnishing carbonic acid as it does to plants, supplies ammonia for the spontaneous generation of animals. The fluid in its turn supplies hydrogen and oxygen.

The organic productions of spontaneous generation are the most simple of all, because they spring from organic globules that are not expressly prepared for this purpose.

Professor Berniti is of opinion that not only infusory, but also entozoary, animalcules are developed by spontaneous generation. He considers it too as highly probable that the *acarus scabiei* is the product, rather than the cause, of the itch. Lastly, he seeks to show that the Zoosperms are not genuine animalcules, but rather organic molecules formed in the minute extremities of the spermacetic tubes by the effect of an exuberant nutrition. The action of the Zoosperms seems to be very analogous to that of the Pollen in the fecundation of plants; and their movements may fairly be compared to those of this vegetable matter. — *Annali*

Univ. di Medicina, luglio, 1844, and Revue Medical, Nov. 1844.

ON THE DEPOSITION OF CARBONACEOUS MATTER IN THE TISSUE OF THE LUNGS.*

1. There is continually forming and accumulating in the lungs of man, during adult life, and more especially in old age, a certain amount of carbon in a state of the most minute subdivision.

2. This carbon, that exists even in the very substance of the pulmonary tissues does not come from without.

3. Wherever it exists in sufficient quantity to form deposits of one millimetre in extent, the air tubes, the blood-vessels; and the pulmonary tissues become transformed into a dark coloured substance, which may occupy even more than one half of the entire lungs.

4. The respiration no longer goes on in those parts which serve as a matrix to the carbonaceous deposit; there also, the phenomena of the circulation do not take place in the state of disease, and the process of inflammation is consequently never developed.

5. The successive accumulation of this carbon beyond a certain term is apt to cause death in old age, by rendering the pulmonary tissue more or less impermeable to the air.

6. The constant presence of this substance in the lungs of old persons is one cause of the fatality of pneumonia and congestive affections of the respiratory organs in them.

7. These molecules of carbon in the pulmonary parenchyma seem to have a marked influence on the phenomena, which may subsequently occur in and around tuberculous deposits. When tubercles are formed in the lungs, and the carbonaceous matter is deposited in considerable quantity around them, they do not undergo the successive changes proper to phthisis, in the usual course of this disease. The tubercles become calcareous, are deprived of their fatty matter, and do not enlarge. No vessels of new formation are developed around them; or rather, if such vessels have already become enlarged before the deposition of the molecular carbon, they become obliterated in consequence of this deposit, and the progress of the phthisical disease is arrested.

8. The production of carbonaceous matter in the lungs of man, — occurring, as it does, quite independently of any trade or profession and (most probably) of any particular sort of food — is a fact which should be studied in a pathological as well as a physiological point of view, considering the influence which it may have on the course and issue of the most frequent pulmonary diseases to which old persons are liable. It would seem also that the deposition of this matter in the parenchyma of the lungs has a tendency to arrest the progress of phthisis,

* Ibid.

by forming a wall around the tubercles, and thus separating them from the intact pulmonary tissue. — *Comptes Rendus. — Revue Med., Dec. 1844.*

M. CAZENAVE ON THE DIFFERENT SORTS OF CAUSTICS.

The *Powder of Dupuytren* is composed of one part of arsenious acid and 200 parts of calomel. It is a mild and very manageable caustic, that is useful in cases of lupus in women and children, when the ulceration is superficial and of limited extent. If the diseased part be dry, it may be necessary to denude it by means of a blister, and then to sprinkle the powder upon the raw surface. A certain amount of heat and painful swelling is usually caused by this application. When it falls off, there is generally observed a decided modification of the diseased surface. A few applications are sufficient to effect a cure in a great many instances.

The *Vienna powder and paste* are remedies of great power in certain cases of lupus ulceration. They are composed of equal parts of powdered quicklime and potassa cum calce. In using it, we take a portion of this mixture, and add a small quantity of spirits of wine to bring the powder to the consistence of a paste. A piece of adhesive plaster, with a hole in it of the size of the intended eschar, should be laid over the diseased surface, and the paste is then applied on the exposed parts. It is to be left for ten or twenty minutes, according to the depth of the eschar that is wished, and the ability of the patient to endure the pain.

The *chloruret of zinc paste* is much used in the present day. It is made by mixing one part of this substance with one or two parts of flour, moistening the mixture with as little water as possible. The pain produced by this application usually lasts for several hours. A greyish-coloured eschar is formed; and this, in most cases, remains attached for two or three weeks before it is separated. The surface underneath is generally not ulcerated. M. Cazenave very frequently has recourse to this caustic in certain cases of lupus, to destroy the non-ulcerated tubercles.

For this purpose, he usually applies only a very thin layer of the paste, so as not to destroy the entire tubercle; and in this manner he often succeeds in effecting a complete resolution of it, without any scar being left behind.

In very many cases of long standing and deeply-corroding lupous ulceration, he gives the preference to the arsenical paste over the two others which we have mentioned: its action is twofold; local as a caustic; and general by becoming absorbed, and exercising a potent alternative or modifying influence upon the economy. The following is the formula which he invariably uses:

Take of White oxide of arsenic, 2 parts.
Sulphate of mercury, 1 part.
Animal charcoal in powder, 2 parts.

When used, a small quantity of this powder is to be made into a thin paste by the addition of a few drops of water; this is put upon the denuded surface — which should seldom or never exceed in extent that of a franc-piece. This application usually produces not only very sharp pain, but also a severe erysipelatous swelling, which lasts for 24 or 36 hours, and is sometimes accompanied with grave constitutional symptoms. Generally these subside very quickly; and then there remains on the cauterized part a hard brown crust, which often adheres for nearly a month, before it is detached.

Fluid caustics. — M. Cazenave frequently makes use of a solution of the sulphate of copper for the removal of those small warts that often form upon the shoulders and back, and also of certain pediculated horny productions, which occasionally appear upon these parts. A stronger solution must be used for the latter form of cuticular excrescence.

In the treatment of favus and tinea, he recommends a weak solution either of this salt of copper, or of the nitrate of silver, or of acetic acid.

Of fluid caustics, one of the most potent and useful is the acid nitrate of mercury. When used to the surface pure and undiluted, it acts as a mere caustic; but when considerably weakened, and especially when applied to a large surface, it is unquestionably absorbed, and then it acts on the system.

It usually causes a good deal of pain and inflammatory swelling. The cases most benefited by its application are those of lupus, in which the ulceration is extensive and not deep-seated.

The erysipelatous inflammation, which this as well as other caustics — more especially the arsenical paste — are apt to produce, need not be much dreaded; nay, the effects of the cutaneous phlegmasia seem sometimes to be decidedly salutary in the end. — *Annales des Maladies de la Peau*, Oct. 1844.

M. Gibert has recorded in a recent No. (Oct. 1844) of the *Revue Medicale*, a case of severe scrofulous lupus of the face, in which the progress of the disease was arrested and the extensive ulcerated surface became cicatrized under the employment, external as well as internal, of cod-liver oil. The use of this medicine was steadily persevered in for a full year and a half. During this time not only did the local malady become healed, but the general health — which had formerly been very weak and ailing — was very decidedly improved.

The patient was a young woman, and the disease had existed for nearly six years. On one occasion she had derived very considerable benefit from the internal administration of the dento-ioduret of mercury, and the external use of the proto-ioduret ointment; but the benefit was temporary only. She had been subjected to a regular and protracted course of iodine treatment; but certainly with no advantage. — *Med. Chir. Rev.*

DYSPHAGIA—PARTIAL PARALYSIS—
SPASM.

The narrative of the case designated by the above terms, which we introduce into the pages of the *Bulletin*, was sent to us with a request, on the part of the narrator, that we would give our "views and opinion of the same in full." As no *post-mortem* examination was made, the history of the case is necessarily very imperfect: we have hence not indulged in any opinion or speculation as to the ætiology of the disease. We do not give the name of the narrator, as he did not send the statement to us for publication. — *Ed. Bull. Med. Sciences.*

On the 4th inst. (March), at 9 A.M., I was called to see —, of a nervous temperament, about two years old, and found her pale and sweating, apparently free from pain; occasionally would appear more anxious and to be suffering. No vomiting or sickness at the stomach, pulse slightly accelerated, but weak; the lower extremities motionless, and had been through the preceding night. Shortly before my visit, some difficulty of deglutition had been observed of cold drinks, although she had eaten some bread and coffee for breakfast. I examined the whole spinal pyramid, from the base to the apex, repeatedly, and could not discover any deviation from the normal standard, or soreness on hard pressure: there was no preternatural size, or heat of the head; no tumefaction or redness in the mouth, pharynx, or tonsils, that would account for any difficulty of deglutition; no exterior swelling of the neck or its glands; the tongue was but slightly coated, the edges pink coloured, and of natural size; respiration natural, except, when suffering, it would be a little accelerated; could not detect any disease of the chest, although the child had but recently recovered from a cold.

The bowels in the morning had moved, and the stool was figured and healthy; there was no fulness or soreness of them on pressure; the urine healthy and free, until in the after part of the day when it was less, and turbid; there was no soreness over the kidneys. The child did not complain of pain, but in the after part of the day and evening it would call frequently for *drink*, and in attempting to swallow, it would be-

come nearly suffocated with froth and saliva, and until it was spit, blown, or wiped out of the mouth, it would not become easy, after which it appeared gunk and bathed in sweat. The temperature of the skin, from first to last, was uniform over the whole system, and the child was rational till the next morning. I was assured it could not have swallowed any hot fluid to scald it; and also, told that in the afternoon of the preceding day, the mother observed it had fallen down, but thought its feet were tangled in its clothes, and after raising it, the child walked, but seemed weak and fell often afterwards. In the evening it appeared to have lost the use of its inferior extremities, and that they remained all night in bed, in the same position, without motion, was restless and cried occasionally through the night, as though distressed, and in the morning could not stand, but ate a little bread and coffee as before stated.

The difficulty of deglutition seemed to increase, and the accumulation of froth and saliva through the day (4th) and evening, until the morning of the 5th, when it became impossible, and it fell into *tremors*, like cold chills, the eyeballs turned up and the mouth contracted, and it became insensible, which continued to recur at short intervals, till death, which occurred at eight o'clock in the morning of the 5th, 23 hours from my first visit. In the afternoon and night of the 4th, there was a disposition of the neck and body to bend back, but would straighten and bend forwards when raised up; also the pulse continued to increase in frequency, and remit, as the powers of the system gave way. After respiration and pulsation ceased, the child remained warm to the very extremities for an hour before it began to get cold and stiff.

After my first examination, I enquired if it were possible for the child to have had anything poisonous, and was answered that there was nothing in or about the house of that nature, except in the cave adjoining the house there was a box of paste, that had been procured to poison rats at the barn, which, I suppose, contains phosphorus, from its luminous appearance in the dark, but that was not accessible to the child, and there was no inflammation of the stomach to indicate a poison of that nature. There never had been oxalic acid about the house. If poisoned, I supposed it must have been in such a way as would affect the nervous system, in order to have produced that assemblage of symptoms, in the absence of inflammation, or organic disease,

and which appeared to progress so rapidly towards a fatal termination.

The symptoms were more like those of hydrophobia (a disease of unfrequent occurrence in this vicinity), than any other I could think of: and would that be preceded by loss of motion in the inferior extremities? If so, and it could have been exposed to the virus, there would be no difficulty in accounting for the peculiarities of the case. I learned in the course of the day (4th) that their house cat had died about four weeks prior to that, but supposed its death had been caused by eating of the poisoned rats at the barn; she lay under the bed, sick and stupid, and was driven out of the house, and as she was running out, the girl says, "her eyes looked like a mad dog's:" she ran into the cave, and was found dead there; shortly after, and removed. The child was fond of the cat, and it had been found sometimes, previously, in the cradle, sleeping with the child. The parents think the child could not have been bitten by the cat, as there was no mark visible about its person of any such injury. Could any of the saliva of the cat, if she had the hydrophobia, have found its way into the child's stomach, and if so, would it produce that disease? The child, for some time anterior to its sickness, had been observed to sweat freely and was more easily agitated.

In the treatment, strong liniment was used, from first to last, to the throat, breast and spine, frequently, so as to produce and keep up considerable rubefaction of the skin; the extremities were washed with pepper and vinegar; and antimonial wine, with mixture of liquorice, given to empty the stomach—which it did once freely—hoping to dislodge something that by sympathy might affect deglutition; after which 5 grs. calomel with sugar was placed on its tongue and moistened, which was swallowed, and followed in two hours with castor oil. Some passed into the stomach, and some of it was rejected with the saliva. This was repeated twice or three times, and not having operated, injections of 30 drops of turpentine, ℥ss. castor-oil, ℥ss. of molasses, in $\frac{1}{2}$ pint water was administered, and it brought away free evacuations, healthy in appearance, and continued to operate occasionally, till midnight. Before the physic operated, flannel cloths wrung out of warm hop tea, were applied to the bowels, but discontinued after the operation. Arrow-root, or in place thereof, potato starch, sweetened, and with nutmeg grated on it, made about the consistence of

thin jelly, was given for nourishment. At first the patient swallowed this pretty well, but towards evening and through the night, with great difficulty. Any attempt at deglutition through the night would produce paroxysm of suffocation and prostration, accompanied with a great accumulation of froth and saliva. Its breathing, before the froth was removed from the mouth, would sometimes occasion a little rattling. I observed that it could swallow for some hours at first anything having consistency better than tea or water. The child was not of a scrofulous diathesis.

N.B. The father, after reading this, says that the child called for drink often through the night of the 3d, and is confident that it had difficulty in deglutition from the first, and that it was about 44 hours from the first appearance of indisposition till its death.

CASE OF SUCCESSFUL EXTIRPATION OF THE EYEBALL, FOR CANCEROUS TUMOUR.

By E. H. KELLY, M.D., Mobile, Alabama.

Wm. Stringer, farmer, of Clark County, in this State, aged 49 years, of bilious temperament, placed himself under my care on the 20th January last, for a fungoid tumour of the left eye. The history of the case is given by the patient as follows. That he had suffered for nearly five years of a tumour growing from the external surface of the eyeball, accompanied with severe lachrymation, and acute lancinating pain, which deprived him of rest, and the performance of his ordinary duties. The patient says that his misery has at times been so great as to produce temporary fits of mental alienation, and to obtain relief, he has submitted to three operations, which were performed by different surgeons, at his own residence, and at distant intervals; the latest being practised in April last. These operations were completely ineffectual, and did not check the fungus, or admit of the advantages of the intervention of change of structure; the disease sprouting out more furiously as it was meddled with by the knife. Mr. S. therefore determined to visit Mobile with the desperate resolution to undergo any operation that might be proposed; and in accordance therewith, called in several physicians of this city, all of whom, he states, united in condemning an operation for the following reasons, to wit: recurrence of disease in an aggravated form, hastening a fatal termination; adhesion to the bones of the orbit; constitution inad-

quate to withstand the effects of the operation itself; fungus hematodes, &c. Having heard these objections, and carefully weighed them, I now examined the tumour, which I found to be of a hard scirrhus character, a pinkish purple colour, painful to the touch, and discharging a bloody fluid on the slightest pressure. It had protruded between the eyelids which were concealed from view, except the inner margin of the superior cilia. Sight had long since been extinct, and the tumour completely occupied the space between the eyebrows, the root of the nose, the external commissure, and down to the middle of the cheek. A thorough investigation at once decided me that the tumour was a carcinomatous affection, in the state as Scarpa describes, previous to its malignant action. I was well satisfied that there was no complication with the bony structure, as it was slightly moveable, and a glance convinced me, that the disease was not fungus hematodes, from its scirrhus touch, colour, and general aspect; besides, the rare occurrence of this affection in old persons (fungus hematodes, according to Wardrop, Lawrence, and others, appearing mostly in children—cancer melanosis, in aged persons). Confident that my patient had sufficient stamina to encounter the consequences of an operation, although much enfeebled by the discharge and suffering, and no diseased glands being observed about the neck or head, or constitutional diathesis, I advised as the only hope, the operation for extirpation of the tumour and eyeball; the patient having but a short period of painful existence as the bitter alternative.

The failure of the previous operations I attributed to want of proper diagnosis; for Scarpa, Lawrence, and others, have all declared that the operation should embrace "all parts altered in structure, and if possible a portion of the surrounding healthy substance." Now, as Travers says, that except the lachrymal gland and conjunctiva, he believes no other texture of the eye is primarily affected, I am at a loss to conceive what benefit could be realized from merely shaving off the fungus from a diseased structure, as was practised by my predecessors. Although I could not guaranty to my patient a permanency of cure, I considered the operation as warrantable, on the conditions as laid down by Dessault, Scarpa, and Lawrence, and I could not have wished better authority than Cooper, who says that "what is usually called cancer of the eye, does not seem to be nearly so malignant as carcinoma of the breast, for if the distemper is confined to the globe and eyelids, and the cellular substance, and bones of the orbit continue unaffected, the operation

generally produces a radical cure; a fact strongly dictating an early recourse to that effectual means in surgery, the knife." (*Vide* Cooper's Surgery, with notes by Alex. H. Stevens, M.D., and notes by S. McClellan.) Velpeau even says that we must not be inactive, though desperate the issue. Other considerations had their effect with me in forming a prognosis, as the possibility of the disease not springing from a cancerous diathesis or latent disposition, but a tumour made malignant by escharotic applications; it being an established fact that tumours, not at first of hurtful tendency, are liable to malignant action from improper applications. Also, the success of other operators, as Dessault, Bier, &c., in cancer of the eye; and the similitude of the cases related by Hildanus, and Wardrop; the last, who describes a case of a gentleman who consulted many respectable surgeons in England for a large excrescence of the eyeball, but as they supposed it to be cancerous, they declined operating, which he undertook with entire success and radical cure. After due preparation, I operated on the 25th February last, in the presence of several gentlemen of the medical faculty in this city. My patient being placed in the recumbent position, I inserted a large tenaculum into the tumour, and gently drew it towards me; with a scalpel I now made an incision through the external commissure for about an inch; the lid being now carefully everted, the knife was pushed on to the depth of an inch, dividing the conjunctiva at its reflection, and being conducted round the circumference of the orbit, cutting in turn the inferior oblique, a small portion of the superior tarsus near the caruncula, which pierced the fungus, and the superior oblique and levator palpebræ muscles. In this operation I used the long margin of the orbit as a fulcrum, which enabled me with more precision to effect my purpose, and avoid such accidents or bad surgery as a maldirection of the knife has occasioned, viz: penetrating the orbital plate, maxillary sinus, cutting the second branch of the trigeminal nerve, or through the sphenoid hole, wounding the middle lobe of the brain, &c. I think also that the scalpel is a safer instrument than the bistoury, as being better adapted to the conformation of the orbit, and accordingly shall always prefer it. In my next step in the operation, I adopted the manner of Dessault and Lawrence, introducing the curved scissors from the external side and avoiding the pedicle composed of the recti muscles and optic nerve. The tumour and eyeball were now freed, and a portion of the lower lid that looked suspicious. The hemorrhage, which amounted to a few ounces was suppressed, and the lachrymal gland removed, which was unaffected; the whole operation occupying the space of 2½ minutes. As soon as the socket could be examined, it was found free from cancerous induration; a dossil of lint was introduced, to be removed the following day, and a soft rag kept

moist with cold water, applied after the operation, and continued until cicatrization was established, which was effected in the short period of three weeks, and without any untoward circumstances. The patient recovered his health and spirits, and a better use of the eye unaffected. The tumour was now examined and found entire; proving that there were no morbid adhesions which had not been removed by the knife, the eyeball not enlarged, and the optic nerve in a sound state. The patient has departed nearly six weeks since for his home; gratified for the services he has received, and which I trust may be enduring.

I cannot close my remarks here without coinciding with Messrs. Lawrence and Guthrie, against the practice of impacting with chirpie, the orbit after extirpation of the globe. When the connection of the delicate sheath of the optic nerve and the brain is considered, as well as the cicatrix that nature produces from the remnant of conjunctiva which remains besides that which forms from the bottom of the orbit, our astonishment must cease at the bad result of this operation in many cases; the lint causing much irritation, without doubt a recurrence of disease, inflammation and suppuration of the brain, and in its character as an extraneous body, operating as a wedge, preventing the speedy separation of healthy structure.

March 22d, 1845. I have just heard from Mr. Stringer, and I am informed that he is well, and getting fat. — *New Orleans Med. Journal.*

DR. MERCIER'S TREATMENT OF ULCERS.

An immense number of chronic ulcers are admitted into the Hospital, and quite a variety may generally be seen in the surgical wards. The subjects, for the most part, belong to the poor class of Irish labourers, whose habits are bad, who are very much exposed to the inclemencies of the weather, and who are proverbial for their disregard of all the dictates of prudence. Their constitutions are generally very much injured by intemperance, and it is almost impossible to establish the healing process when any injury is inflicted upon their skins, for this is the most common seat of ulceration. Dr. Mercier has found the following plan of treatment to succeed better than any other: — He gives iodid. potass. ʒss., and iodine gr. i., dissolved in decoq. sars. ʒvi. daily. When suppuration is copious, he has the sore washed clean with chloride of soda, and dresses it with lint wet with vin. aromat. — when the dis-

charge is moderated and granulations spring up, he covers the sore with narrow strips of adhesive plaster; with the triple view to counter-irritation, compression, and exclusion of the air. — *Ibid.*

A NEW VERMIFUGE.*

The next disease, deriving importance from its extreme prevalence in Abyssinia, is the *Tænia solum*, called (wosefat), which species of intestinal worm attacks all classes, and there are few natives who are exempt from them. By themselves it is attributed to eating brindo or raw flesh, and they assert that those who abstain from this diet are free from the complaint, but that if it once makes its appearance it is seldom eradicated; the Abyssinians retaining the opinion that each joint is capable of reproducing a perfect worm.

Fortunately, the country which is so peculiarly the seat of this disease, possesses a most efficient remedy in the flowers of the Kosso, which tree being so indispensable to the health of the inhabitants, is carefully preserved, and a group of them is always found in the immediate vicinity of the villages.† This valuable anthelmintic is taken by every individual regularly every two months, children commencing the discipline at the age of five or six years, and continuing it for the remainder of their lives. This frequent and indiscriminate use, however, gives origin to serious complaint, of which prolapsus ani is the most common; the great exhaustion following its violent action, when injudiciously administered, sometimes even terminating fatally. The continued use of this drastic purgative, though necessary to the preservation of health, must tend to shorten the natural period of existence, for the Shoans are not a long-lived race, and instances of advanced old age are rarely met with.

Kosso (*Hagenia Abyssinica*), when in maturity, attains the growth of a moderate sized tree, its red racemes of blossom much resembling, in form and distribution, those of the horse chestnut. These flowers are first dried in the sun, and all stalk and extraneous matter carefully removed, and are then pounded fine. The dose varies from six to eight drachms weight, according to the quality of the drug and strength of the person, and is drank early in the morning in a cupful of cold water; if kept mixed for any length of time, its power is said to become deteriorated. It usually acts in the course of a couple of hours, the first evacuations being watery, and the worm generally

* Dublin Journ. Med. Science.

† To mark the importance attached to this remedy, there is a village near Angolalla without a tree of this species in its neighbourhood, from which circumstance it has obtained the name of "Dewasa Kosso," — which was explained as meaning, "May God give you Kosso."

expelled by the third or fourth. During the time of its operation, abstinence from food or drink is enjoined, but afterwards, in the evening, the patient is directed to eat freely of hot spiced dishes, commonly wotz or dillee, and drink mead or beer. Should five or six hours elapse without indication of the medicine having taken effect, it is recommended to eat a full meal, seasoned with hot condiments, which is said to quicken its operation.

A favourable opportunity occurred of trying the effects of Kosso, on a European soldier of the escort, who was troubled with the lumbricus teres, on whom it acted mildly and effectually. Should it be considered a desirable addition to the *materia medica* of Europe, a plentiful supply of Kosso might be easily obtained at Massowah on the Red Sea, from the merchants of Abyssinia who visit that port, which is but a journey of five or six days from the country of its growth; or, as it appears of a hardy character, and the climate of Abyssinia seems favourable to northern vegetation, the tree itself might perhaps be successfully introduced, by seed, into Europe. — *Transactions of the Med. and Phys. Society of Bombay.*

BULLETIN.

Philadelphia, June, 1845.

Journals.

We are pleased to see, once more, the *Southern Medical and Surgical Journal*, new series, edited by Drs. Paul F. Eve and J. P. Garvin. Number 5, or that for May, is the first that has reached us. Our Bulletin will be sent from the beginning of the present year, and we should be glad to receive the *Southern Journal* for the same period, retrospectively.

Number one, of volume second, of the *Illinois Medical and Surgical Journal*, edited by Dr. James V. Z. Blaney, has also been recently received. We hope to see, in subsequent numbers, more evidences of Dr. B.'s identification with the work. It is anything but amusing to have the editorial charge of a medical journal, if one makes it the vehicle for diffusing information from all quarters, and gives his own impressions and opinions, at the same time, in the way of criticism and commentary.

VOL. III.—18

The *St. Louis Medical and Surgical Journal* has reached the termination of its second volume. Dr. Linton, its editor, proposes early in May to commence the third volume "in an enlarged form and under somewhat different auspices." We know not whether Dr. L. has carried out his intentions in this matter.

Within the present hour, we find placed on our desk, the first number of a new periodical — the "*Missouri Medical and Surgical Journal*," edited by B. F. Stevens, M.D." It contains good papers by Drs. Barbour and McDowell, of the Medical Department of Kemper College, and by other physicians of St. Louis.

The May number of the *New York Journal of Medicine and the Collateral Sciences* comes out under the editorial direction of Charles A. Lee, M.D. The publisher could not have made a better arrangement for the interests of his subscribers and the usefulness of the journal. Dr. Roberts has contributed part of a long and elaborate paper on the *Pathology of Leucorrhœa*, in which he displays a great deal of bibliographical research.

Reports of the Eastern and Western Lunatic Asylums of Virginia.

We are unable to do more, just now, than to say, that these reports, that of the Eastern by Dr. Galt, and of the Western Asylum by Dr. Francis T. Stribling, afford a most encouraging prospect of the successful continuation of remedial measures, therapeutical and hygienical, for the cure of the insane, who may be sent to these institutions. We shall take occasion to speak more in detail of these documents. The present, or Seventeenth Annual Report of the Western Asylum, is the first that has ever reached us. We mention this in order to remark, that, although we do not formally, every month, acknowledge the receipt of all the works, essays, reports, &c., sent to us, we hardly ever fail to take notice of their character and contents; thus showing, prac-

tically, that they have reached their destination.

The Insane Poor of Philadelphia.

Grievous deficiencies exist in the insane department of the Philadelphia Alms-House, which, now that they are so evident, and have become so generally known, must, ere long, be removed, and the arrangements for the insane poor be put on a footing with those in other enlightened communities.

From an article in the *Pennsylvania Journal of Prison Discipline and Philanthropy*, we take the following plan of reform in the above institution:

"From what has been already said it will be apparent, that what is wanted to put the insane department of the Philadelphia Alms-house on a respectable footing is—

"1st. A responsible head, who shall have a general superintendence of all its departments.

"2d. Means for carrying out a complete classification of the patients, and a proper system of attendance.

"3d. Means of employment and exercise.

"4th. A proper system of heating and ventilation.

"We need resort to no theory to know how all these ends are to be attained; the experience of other institutions, in our own and many other states, offers a ready answer to the question—one too that is open to every one who will take the trouble to inquire. The means alluded to are—

"1st. To separate the insane department entirely from the sick hospital. To place a well-qualified medical man at its head, who shall reside upon the premises, and have a general superintendence of it; the direction of the medical, moral, and dietetic treatment of all the insane, and the selection of all persons engaged in their care. On this we are particularly anxious to insist; without it all other changes will be failures.

"2d. To form a complete separation of the three wards in the present building—to erect a detached building for each sex, at or near the ends of the present small yards, each capable of accommodating from twenty-five to thirty patients, to be used for the noisy, very violent and filthy patients.

"To devote all the vegetable garden beyond the small yards, already referred to, and all the lands east of the Darby road and south of the lane, leading from it to the main building (between forty and fifty acres), to horticulture, in which as many as possible of the patients should be engaged; and the whole to be laid out in walks as airing grounds, for all the patients of both sexes. These grounds to be so enclosed as to give them a proper degree of

privacy. Other provision to be made for additional means of occupation and amusement.

"The plan above suggested is not the very best that could be proposed, but it is the most economical, and would give the department of which we are speaking, a respectable standing among American institutions for the insane. The expense of these proposed changes would be less than might be supposed, and the amount of benefit that would be conferred upon an indigent class of our fellow-citizens, whose distressing afflictions appeal with peculiar force to our warmest sympathies, would be incalculable.

"In urging the importance of immediately placing the Insane Department of our Alms-house on a proper and enlightened footing, it is not to be supposed that it will in any way interfere with the proposed state institution. Within the bounds of our Commonwealth, out of Philadelphia, there are enough now suffering from ill treatment, or no treatment, to fill such a hospital to overflowing. But Philadelphia is bound to provide for her own insane. She has the means; she has most of the necessary accommodations already provided; and her character for enlightened benevolence cannot well allow her to be behind her sister cities, where similar establishments exist, some of which are highly honourable to them."

The Journal from which we have taken these proposed reforms, has, so far, realized the expectations of its most sanguine friends. We commend it to all who take an interest in the subject of Prison Discipline, with its collateral bearings on hygiene, morals, and psychology.

ROYAL SOCIETY SOIRÉE.

Saturday, April 5.

Anastatic Printing—Ross's Microscope—Artificial Palates.

The last Soirée of the Royal Society for the season took place on Saturday last, at the house of the noble President. It was attended by a large number of noblemen and gentlemen, including nearly all who have acquired any celebrity in literature, science, and art. The members of the medical profession were very numerous. Among the scientific discoveries which were made subjects of illustration was the newly-invented art of Anastatic printing, of which, so far as it depends on chemical principles, we here give a brief description. The whole of the process was carried on in one of the rooms, and painted sheets, which would have taken a considerable time for composition, were transferred to zinc, and perfect impressions drawn from

them in an incredibly short period. The art itself is essentially founded on chemical principles, and applies to the copying of all documents in which oil is the basis of the ink used. The printed sheet or engraving to be copied is sponged with nitric acid diluted with eight parts of water: it is then pressed in folds of blotting paper, and deprived of nearly the whole of its moisture. When nearly dry, it is placed with its printed face downwards on a clean surface of laminated zinc, and submitted to very powerful pressure in a roller press. The pressure is so great that the layer of zinc becomes curved by the process. The surface of the zinc is acted upon by the diluted nitric acid, and finely corroded in all those parts, corresponding to the unprinted portions of the sheet, the oil preventing the imbibition of the acid in the printed parts. This leaves on the zinc an embossed or slightly raised copy of the whole of the printed letters or engraving. A liquid (said to be mucilaginous) is then rubbed over the plate; this soaks into the porous or corroded parts, and leaves the raised portion, which afterwards receives printers' ink from a roller in the usual way, and then yields impressions as if it were a closely set mass of type. The pressure would speedily lead to the obliteration of the raised metallic letters, but for the occasional application of another liquid (described as a mixture of phosphorous and phosphoric acids), which is stated to remove the zinc from the already corroded portion of the plate.

The most remarkable part of this discovery is, that a printed page nearly effaced and ineligible may be made to yield a perfectly clear and distinct copy. This depends on the fact that it is the oil in the printed paper which excludes the diluted acid; so that if a page were printed with colourless oil, the action on the plate would be the same.

Among other subjects of interest were two of Ross's microscopes, in one of which was exhibited metallic copper crystallized in tetrahedra, and procured by the following singular process. Glass, coloured by oxide of copper, was melted, and then stirred with an iron rod; the copper was thus separated in the metallic state, and became crystallized during its separation. The iron is converted to peroxide, which gives no colour to glass unless it be present in very considerable quantity.

An apparatus for carving artificial palates, with teeth, in ivory, was also exhibited.

A model of the palate is taken in wax, and from this a composition mould is afterwards procured in the usual way, and fixed in the machine. It is impossible, in a short space, to give a description of this ingenious apparatus—the invention of Mr. Tones, but the principle on which it acts is somewhat similar to that of the anaglyphographic or medallion engraving. A fac-simile of the palate is thus taken in ivory. Some palates in ivory were shown which exhibited all the minute elevations and depressions of the natural palate, and indeed, but for the colour of the material, might have been mistaken for it. This invention may ultimately have some important surgical applications.

The English Evangelical Magazine, for January, contains the following announcement of the proprietors. Will the noble example ever be generally followed? If so, we may hope to see the end of quackery. Quacks live by the newspapers. It is their lying advertisements, stuffed with forged certificates, which give currency to their nostrums. The evil is a monstrous one, but we confess we have but little hope of living to see the day when the proprietors of newspapers shall with one accord set their faces against it. — *West. Journ.*

"We shall cheerfully abandon, in future, the publication of all advertisements of quack medicines, which will be an act of homage to our own taste and judgment, no less than a concession to the strongly expressed opinions of some of our best friends, who, with ourselves, deeply deplore the disease and mortality occasioned by the nostrums of medical quacks, published daily in this great metropolis."

DREMEL'S VAPOUR-BATH AT AIX.

"It is by no means an inviting-looking place. Having undressed in a neighbouring apartment, you are ushered into an arched brick passage, about six feet high, and less than a yard wide. With the exception of such light as can find its way through a small pane of glass in the door from the outer passage, the place is quite dark. Following the guide, who is naked to the waist, you grope your way along this sulphurous and repulsive vault, and at the extreme end, at least ten yards from the entrance, are an arm-chair and foot-board, where you are requested to sit tranquilly down while the attendant retires and closes you up. It is very much like building up a nun alive in the walls of a convent, or Liston assisting at his own funeral.

Bell there is none; and if a delicate invalid were to faint, there he must lie and stew, unless he had strength enough to rush along the passage. But I have no doubt it is efficacious. You take the sulphur-vapour into the lungs as well as through the pores; you breathe, and swallow, and live in brimstone. If it had not been for very shame, I should have bolted out of this living catacomb, such was the stifling oppression I experienced. Ever and anon, the attendant, opening the pane in the door, roared out his hopes that you were getting on well: something like inquiring of a goose in an oven if he was done enough; adding such consolatory jokes as 'C'est une espèce d'enfer, n'est ce pas?' At the end of twenty minutes, he walks into the oven with a burning hot sheet to wrap you in, and you retire to finish your cooking between two feather-beds." — *A Hot-Water Cure — sought out in Germany.*

RECREATION—AERATION.

Prince Albert, we perceive, has consented to have his name put down as a patron of the Festival about to be held in Manchester, in aid of the fund for erecting Baths and Wash-houses. — Speaking of the Sanitary arrangements now making for the happiness and improvement of the people, it is not a little singular, that while the overgrown and crowded cities of the kingdom are seeking at great loss to make clearings for the purpose of obtaining parks and pleasure grounds, that some unwholesome growth of bricks and mortar should be permitted in other places, to overrun the playgrounds which nature has provided and centuries have consecrated. The spirit of building speculation is, it seems, about to invade the beautiful fields in the neighbourhood of Nottingham, over which the breeze and the populace have so long played together, amid a world of meadow-sweets; and the South Inch of Perth, one of the twin parks of that name which form the finest features in the beautiful scenery that surrounds the "fair city," — is about to have one-third of its immemorial space shut up by buildings connected with the termini of four different railways. To break up such natural reservoirs of health at the time when others are taking pains to form them, is not merely to be behind the philanthropic genius of the age, but to be going deliberately backwards; and we trust that the public spirit which is actively rearing elsewhere, will be aroused to the

easier task of preserving, in all places so naturally favoured as the towns in question. — *Athenæum.*

OBITUARY.

M. RIBES.

M. Ribes was one of the most talented and one of the most celebrated of the French military surgeons of the revolution, and of the empire. Born in 1766, at Bagnères, he first studied at Toulouse under Alexis Larrey, and then at Paris under Desault, Pinel, Sabatier, &c. He was the friend and fellow-student of Bichat, Richerand, Bretonneau, and of many other illustrious men of the present century. In 1792 he adopted the career of military surgery, and, on the recommendation of Sabatier, obtained an appointment at the Hotel des Invalides. The following year he was drafted into the army. From this epoch, until the definitive return of the Bourbons, he was continually in the field, and assisted at nearly all the campaigns of that eventful period. During his lengthened military career he was present at twenty drawn battles, seventeen smaller encounters, and at three sieges. He also took an active part in two disastrous epidemics of typhus, which raged the one in Spain, and the other in Saxony; and he did not even escape participating in the fatal campaign of Russia in 1813. In the course of these numerous campaigns, the dangers which he encountered, the narrow escapes which he experienced, would alone fill a volume. Thus we may mention, that he was standing by the side of General Dugommier, of Marshal Duroc, and of General Kirschner, when, at different periods, they were killed, the first by a shell, the two latter by cannon-balls.

After the peace, Ribes returned to Paris, and devoted his leisure to the scientific study of his profession. It was not, however, till much later, when he had matured his extensive experience by reflection and study, that he submitted to the world those labours which gained him, in the world of letters, the reputation of an eminent scientific surgeon, as well as that which he already possesses, of an able practitioner. His principal work is one in three volumes, which he dedicated to Bichat, entitled "Memoirs and Observations of Anatomy, Physiology, and Surgery." He has also written, in the Medical Journals of the day, a great number of papers on various subjects.

Ribes was an extremely modest, retiring man, and lived away from the world, in the retirement of private life. At the latter part of his career he was placed at the head of the medical class of the Invalides, the magnificent military hospital where he had held his first appointment more than half a century before. Here he found himself, to his great delight, amongst his old companions in arms. This appointment was, however, withdrawn from him a short time ago. The blow was a severe one; indeed, he never recovered it. His health gradually declined, and on the 21st of last February, he died of a chronic inflammatory affection of the lungs. He was, at his death, in his eightieth year. Although so advanced in life, until within a short period of his death, he enjoyed all the physical and intellectual activity of a green old age, not a very common occurrence with members of our profession. — *Lancet*.

M. OLLIVIER (D'ANGERS).

M. Ollivier (D'Angers) died on the 13th of March, after a short illness, aged forty-nine. He was one of the most scientific and talented French practitioners of our times. His treatise "On Diseases of the Spinal Cord," is universally considered to be one of the best monographs that have been written on the subject. He has also written on legal medicine, and was considered an authority on all subjects connected with that department of science. He was a member of the Academy of Medicine. — *Ibid*.

We regret to have to record the death of Professor Thomas Sewall, M.D., of Washington, D.C., which occurred on Monday, the 10th of April, in the 59th year of his age. Dr. Sewall was a native of Augusta, in the State of Maine. He graduated at the Medical School of Boston, and about the year 1820 removed to the city of Washington, where his talents and acquirements, with an upright deportment and great urbanity of manners, soon procured for him the respect and patronage of a large portion of the inhabitants. He was appointed Professor of Anatomy in the Medical School of that place on its first organization, and continued to discharge the duties of the Chair, with distinguished ability, until the time of his death. By the public prints we observe, that the members of the profession of the city in which he resided, and the students of the

College to which he was attached, adopted suitable measures to express their grief for his loss. Beside these, his remains were followed to the grave by a large concourse of people, including a number of eminent statesmen, and the distinguished citizens of the place. — *Med. Examiner*.

Influence of Prison Discipline on Health.

In the first article of the present number of the *Bulletin*, our readers will have seen some facts on this subject, which, although rather loosely reported, are not without their value. Just now, however, our attention is directed to the effects of confinement in prisons on the health of their inmates, by two pamphlets on our table, — the one, "Reports of the Inspectors, Warden, and Physician of the Rhode Island State Prison," the other, the Sixteenth Annual Report of similar officers of the Eastern State Penitentiary of Pennsylvania.

These two pamphlets are broadly contrasted, in the opinions of the nature and effects of the two systems of confinement — the social and the separate — which they respectively describe and defend. Before, however, we can properly appreciate the real effects of confinement in prison, we ought to be made acquainted with the prior diseases of the criminal, those, also, of his parents, and other members of his family; and the diseases of the vicinity of the prison. As far as regards the first, or the diseases with which the criminal has been attacked before his imprisonment, experience shows that his health is improved for some time after his entrance into prison. A knowledge of the diseases of parents, and even more remote progenitors, is absolutely necessary to enable us to judge of the tendency of the criminal to certain diseases, irrespective of any special exciting cause. Of these, it will be sufficient to mention just now, tubercular consumption and insanity; the coming on of which, in prison, may be merely coincident with confinement, but not

caused by it; and is, probably, the development of hereditary disease, quickened perhaps by the vicious courses and exposures of various kinds incident to the life of vagrancy and crime led by the prisoner before his committal. On this point we are yet wanting in sufficient data.

When in prison, the convict is subject to disease from the operation of various causes; such as, bad or deficient food, want of pure air, or exposure to great extremes and alternations of temperature, and inadequate bodily exercise and mental excitement. That these causes are, severally, efficient in the production of disease among people in ordinary life, is a familiar fact, and would of itself warrant the belief, even without direct evidence, that they must produce similar disease in prisons. Not only is this last inference true, but it is unhappily proved, that, in a majority of cases, the average mortality in prisons is greater than in the community generally. There is still, however, a comparison to be made between the inmates of a prison and particular classes; such as those working in mines, or engaged in certain manufactures, or huddled together, in close and illy ventilated streets, badly lodged and badly fed, yet overworked. We might, taking particular cases, compare a mechanic, bent all day over his work, in a small close room, with a convict in his cell, working a certain number of hours, and privileged to inhale the outer air in his yard during regular intervals. On whose side lies the greatest degree of health, or, speaking negatively, the least number of diseases?

The principal document respecting the state of things in the Rhode Island State Prison, at Providence, emanates from the Warden, Dr. Thomas Cleveland, who enters into a laboured argument with the intention of showing the superiority of the treatment of its inmates over that in which separate confinement is regularly practised. Before analysing this, we will place before our readers the

Rules and Regulations for the Internal Police of the Rhode Island State Prison, adopted by the Board of Inspectors, September 25, A. D., 1844.

"1st. The convicts shall be awakened at sunrise, throughout the year, and such as are able shall commence labour within fifteen minutes after that time, and shall continue labour, except during the time allowed for meals and reading, which shall be one hour and a half, until half an hour before sunset, between March 20th and September 20th; and until 8 p.m. between September 20th and March 20th. Any convict not commencing labour as above, without a reason satisfactory to the Warden, shall forfeit his breakfast for that day. All lights shall be removed from the cells by 9 p.m., and no lights shall be allowed in the cells except during that part of the year when labour is performed after sunset, or in case of sickness.

"2d. Food shall be delivered to the convicts twice in each day, at such times, and of such description, and in such quantities, as from time to time shall be proscribed by the Warden, under the advice of the Inspectors.

"3d. Any convict who shall take any oil from the lamp in his cell, shall be deprived of the lamp for one week for the first offence, and two weeks for every subsequent offence.

"4th. Any convict who shall wilfully waste or destroy any material delivered to him for manufacture, or injure any tools, benches, books, furniture, or any part of the prison buildings, shall be deprived of food and water for twenty-four hours for the first offence, and forty-eight hours for every subsequent offence.

"5th. Any convict who shall, by signs or otherwise, communicate with any person outside the prison, shall be deprived of food and water for twenty-four hours for the first offence, and forty-eight hours for every subsequent offence.

"6th. Any convict who shall speak to any person within the prison, who is not an officer of said prison, or who has not lawfully a right to converse with such prisoner, shall be deprived of food and water for forty-eight hours.

"7th. Any convict who shall make any profane, obscene or insolent reply, request, or remark, to an Inspector, Warden, or under-keeper, shall be deprived of food and water for twenty-four hours.

"8th. Any convict who shall refuse to perform any work which may be directed by the Warden, or under keeper, shall be confined in his cell, and his supply of food and water withheld until his return to obedience.

"9th. Any convict who shall neglect to keep his cell in good order, and himself decently dressed in the clothing prescribed by the Warden, shall be deprived of food until his return to obedience.

"10th. Any convict who shall remove any water from the privy pipe, or throw anything

therein whereby the same may be obstructed, shall be deprived of food and water for twenty-four hours.

"11th. Any convict who, while going to or from his cell, shall move faster than a moderate walk, or pass or walk by the side of another convict, shall be deprived of food and water for twenty-four hours.

"12th. Any convict who shall leave his work without permission of the Warden or under-keeper, shall be deprived of food and water for twenty-four hours.

"13th. For disobedience, or for the violation of either of the above rules, the Warden is hereby directed to cause corporal punishment to be inflicted, if in his discretion it be preferable to the prescribed penalty.

"14th. All punishments shall be reported by the Warden to the Inspectors at the first regular meeting after they are inflicted.

"15th. No convict shall be permitted to walk for exercise in the corridor, except by order of the Physician, or in the prison yard, except by permission of the Board of Inspectors, or by a written permission signed by four Inspectors.

"16th. Nursing shall be done by the convicts, excepting in cases of serious sickness, when nurses may be introduced into the prison by the Warden with the consent of the visiting Inspector.

"17th. The convicts may, at the discretion of the Warden, be allowed to use such books as may belong to the prison and have been approved by the Inspectors. Writing materials may be allowed on Sundays, at the discretion of the Warden. All paper shall be accounted for, and if the privilege of having writing materials be abused by any convict, he shall be deprived of it. Convicts may correspond with their friends, within two months of the expiration of their sentence, all letters sent or received to be inspected by the Warden.

"18th. When public worship is held in the prison, convicts shall be required to attend, unless prevented by ill health, or other reasons satisfactory to the Warden.

"19th. Convicts in good health may be allowed the privilege of the warm bath once in three months.

"20th. The Physician shall make his weekly visit to each convict, as prescribed by law, on Monday or Tuesday; and in making such visit he shall not enter the cells unless he deem it to be necessary. He shall, in his Report of the health of the convicts, made upon the Physician's Journal, state what convicts are so much out of health as to require him to visit them again during the week; and such convicts he shall visit at his discretion; but he shall not visit any other convict until his next weekly visit, unless requested to do so by the Warden, or under-keeper, or an Inspector; and the Warden shall cause the Physician to be notified of every case of sickness, requiring his attendance, that may occur between the weekly visits.

"21st. No convict shall have any conversation with the Physician, except in relation to his health; with the moral instructors, except in relation to the subjects of their instruction; nor with any person in relation to any matter not especially connected with their duty, excepting the Inspectors, Warden and Official Visitors, and no convict shall make any complaint except to the Inspectors or Warden, or in reply to a question asked by an Official Visitor.

"22d. The uniform of the prison shall be jacket and vest of dark grey woollen cloth, striped cotton shirt, and pantaloons half of grey and half of blue woollen cloth.

"23d. Friends of any convict may be permitted, in case of dangerous sickness, to visit and converse with such convict, by permission in writing of four Inspectors.

THOMAS M. BURGESS, *Chairman*.

AMHERST EVERETT, *Clerk*.

The extent of range and intercourse allowed to the prisoners in the Prison at Providence, is exhibited in the following paragraph of Dr. Cleveland's report:

"The inquiry is frequently made, how does the present system succeed, in comparison with that which, in its main feature of labour in strictly solitary confinement, has been discontinued. It is well known that this prison was constructed and established upon that plan; and that the principle of strict seclusion has been given up for reasons deemed imperative. By an act of the General Assembly of this State, passed at the January session, 1843, the Inspectors of the State Prison were vested with full power and authority to cause the prisoners then under sentence, or who might thereafter be sentenced to said prison, "to be enlarged of their confinement, by permitting such prisoners to perform labour in the corridor of said prison; by permitting more than one person to remain in a cell, or a nurse to be with them in case of sickness; by admitting them to the yard of the prison in the day time; by admitting such communications to and from their friends, and among themselves, and to receive such books and articles as might be necessary, under such rules and regulations as said Inspectors might establish, and furnish to the Warden, from time to time, consistent with the safe keeping of said prisoners." The first of these provisions was immediately carried into effect, by causing the prisoners to perform their labour upon a platform erected in the corridor of the prison. Subsequently a convenient workshop has been erected for the purpose; and the prisoners are assembled together on the Sabbath for religious exercises."

Dr. Cleveland describes the dimensions of the cells for prisoners, for habitation and workshops, and the clothing and period of labour, which are the

same now that they were when solitary (separate) confinement was practised. The moral and religious discipline under the first plan is, also, noticed.

His data for forming an opinion of the comparative merits of the two systems, the solitary or separate, and the modified as it now prevails in the prison, consist of observations made during a period of four years of the former and two of the latter systems; commencing with but three prisoners, and continuing subsequently "with an increase of about ten prisoners in each year." In the period of four years in which the separate system was followed, there had been, therefore, about forty prisoners, from whose deportment and diseases Dr. Cleveland has fully convinced himself of the entire failure of this system, — that is, of its being detrimental to the health, and disposing in an eminent degree to insanity. Without professing an entire advocacy of the system thus condemned by the Warden of the Rhode Island State Prison, we cannot, however, forbear to enter our protest against the validity of inferences deduced from such meagre and imperfect data. Let us see how far his reasoning and speculations sustain his opinion in this matter.

Dr. Cleveland lays most stress on the bad effects of solitary (separate) confinement on the minds of the prisoners; and he endeavours to illustrate the operation of sudden and entire seclusion, by alleging its analogy to that of the sudden abstraction of intoxicating drinks from inebriates, or those long accustomed to this kind of excitement. "In both classes of cases," he tells us, "I have come to the conclusion, that the derangement was produced by the abstraction of an accustomed stimulus to the brain, either natural, and requisite to a healthy action, or unnatural, and adapted to the supply of a morbid and injurious appetite, and thus necessary, by a bad habit, to the ordinary mental and physical action of the system." We are told also, that

"Without a single exception, those who

have suffered the greatest deterioration from solitude, are men who possessed the smallest portion of intellect, who depended almost wholly upon external influences to keep their brain in action, and who had their accustomed and necessary resources suddenly and almost entirely abstracted. But those who are blessed with better intellects, and who are consequently supplied with a stock of internal resources, upon which to sustain themselves, have been enabled gradually to let themselves down, and have become accommodated to their new and inferior condition, without, or with less, perceptible injury."

The comparison between the two kinds of mental derangement fails, even according to Dr. Cleveland's physiological premises. He tells us, that delirium tremens follows the abstraction of the accustomed stimulus of alcoholic liquors; that is, they whose nervous systems have been most excited by these drinks are the most liable to disease by their sudden abstraction. To render the parallel complete, the class of persons who are the greatest sufferers from the sudden withdrawal of the ordinary intellectual stimuli ought to be those whose intellects have been most active and excited;—whereas the reverse condition of things obtains, and they are most readily deranged by solitary confinement, whose intellects, owing to their habitual dulness and inaction, had been less excited; viz., those "who possessed the smallest portion of intellect." Dr. Webster, in his remarks (at p. 183 of *Bulletin*), gives a better solution of the question, when, after declaring his dislike of solitary confinement on account of its extreme severity, "especially to uneducated individuals," he speaks of these as "often devoid not only of any good principles to fall back upon during their solitude, but who were, instead, frequently the slaves of their own evil passions." It is manifestly the irregular or excessive, not defective, excitement of the brain, at least of that part of it whose functions, in their morbid state, constitute "evil passions," that characterizes mental derangement in the subjects of solitary confinement.

If our supposition be correct, this

morbid condition ought to abate on withholding the stimuli of bad associates, and scenes and temptations of wickedness. If Dr. Cleveland's hypothesis be the true one, it must go on, in an aggravated degree, with the continuation of the aforesaid cause; whereas he admits that the prisoner may, and does, recover from a first attack, and enjoys future exemption for years afterwards, although still subjected to solitary confinement.

We totally dissent from Dr. Cleveland's pathology, when he assumes, an analogical state of the brain in those individuals who, after accumulating a fortune, or having "secured a competency," retire from business, with that in delirium tremens. The "melancholy and oftentimes suicide" to which the former are prone, are the result of local plethora, or that of the brain, and often general plethora from deficient exercise, which requires for removal or prevention, bloodletting, purging, and a reduced regimen—a practice certainly not adapted to the cure of delirium tremens, nor to that of the morbid susceptibility of the brain, which is associated with, if not the cause of, this disease.

Dr. Cleveland forgets, we may as well mention here, that delirium tremens will ensue, after repeated debauches, without the individual having at all abandoned, or been compelled to desist from, his intoxicating liquors;—and, also, after wounds or fractures when new stimulants are applied;—nor is its supervention, after the even sudden abstraction of these drinks, a common thing. It is known, also, that this disease has been repeatedly cured by immediate and entire abstinence and repose, and the withdrawal of all the customary excitement of the senses and brain, as where the patient is kept in a room well shaded, if not dark. Hence it is pretty obvious, that, whether we admit or deny the appositeness of the parallel of the state of the brain in insanity following solitary confinement with delirium tremens, the practical inferences which Dr. Cleveland wishes

to draw, do not follow from his premises, present them in whatever shape he chooses.

We shall make nearer approaches to a solution of the problem, by ascertaining, first, what was the common frame of mind, as regards tendency to, or the actual existence of insanity, anterior to their confinement in prison, of those who afterwards sink into this morbid state; and, secondly, the effects of change on the functions generally, including those of the brain. Not only are all transitions trying in this way, but any new kind of life, whether it be of bodily or of mental labour, is a severe test of the powers of endurance of the system. If we take a member of any of the professions, and more especially of medicine or of divinity, and observe his course, we shall generally find that, within a period varying in duration, but not long after the beginning of his career, he is either visited with sickness or his health suffers in some way, and his nervous system is sorely shaken and enfeebled. Without the good intellectual and moral culture to which his mind had been early subjected, he would manifest more than one symptom of insanity; and even as it is, he sometimes becomes the victim of this disease.

We might select individuals for comparison from quite a different class, by directing attention to those in the lower walks of life who come from the country to town, to seek employment and better their fortunes. They are now subjected to greater and more varied excitement than before; but yet they are often depressed and sad, and sicken with nostalgia, or with typhoid fever and cerebral disorder, which leaves their minds, if they ever recover, weak and inert for some time afterwards. They have, in fact, to undergo a seasoning, just as they, who go from a cold to a hot climate, or from a hot to a cold one, would have to be acclimated. As already remarked, the first year, or it may be few months, of professional life, is also a period of seasoning to those engaged

in it, which may be passed through with a return of bodily and mental vigour, or it may be followed by feebleness of body or of mind, or of both. The field of comparison might be still farther enlarged, by our showing how the countryman, who has become a soldier or a sailor, is exposed to new causes of disease; some of them inevitable, from his change of life, others incidental merely, but all subjecting his bodily and mental frame to a severe trial.

Change in the mode of life, whether this be entrance on professional duties, or engaging in the trades and mechanic arts, not to mention the wear and tear to which the countryman is subjected, who buries himself in a close workshop or factory in which the air is deteriorated by emanations of a deleterious nature; and still more the country girl, whose days, and no small portion of her nights, are spent, when she becomes a resident of the city, in plying her needle,—change, we repeat, is a trial to the constitution of the person thus exposed, as great, and in its operation as deleterious, as that to which convicts in prison, and especially those condemned to solitary confinement, are subjected. We need not marvel if disease should follow the transition in the latter case, as we see daily to occur under other circumstances of life and social position.

So far, our remarks have been on the hygienic aspect of prison discipline; but it is impossible not to draw conclusions of an ethical or moral nature at this particular point of the inquiry. We may all properly ask ourselves and one another, whether that philanthropy is not romantic and extravagant, which should claim for criminals, who have deeply injured society, and some of whom have cruelly taken away the lives of their fellow creatures, exemption from diseases to which so many classes of the community, from the most favoured and highly educated, down to those who are engaged in incessant and toilsome labour, are liable, and under which they frequently suffer. The

inmates of a hospital are sometimes seized with hospital fever, erysipelas, and hospital gangrene, and thus, in place of being cured of the maladies or wounds for which, in the spirit of enlightened charity, they were sent to this institution, they sink under diseases contracted in their new abode. Shall we, on this account, denounce hospitals, and, comparing the sick poor in them to the wealthy, claim for the former all the advantages which the latter enjoy, as respects greater immunity from disease and greater facilities for its cure, when it makes its attacks.

Criminals are patients who labour under a moral pestilence for which they require seclusion, both to prevent the spread of the contagion of their example and influence, and to obtain their own cure. They are entitled to our sympathy, but this does not imply that they should be guaranteed, at all hazards, against inconveniences and even some suffering incident to the treatment necessary for their cure, or that they should be allowed to hold intercourse with those out of doors, or with each other, by which the prohibited things are smuggled in, and the original contagion kept up by the contamination from numbers; and in either case the treatment interrupted and rendered inefficient. Still less can it be expected, that restrictions should be removed, or rules made less stringent, when it is admitted that the treatment by solitary confinement is not only curative, but punitive, and that it is intended both to remove the vicious propensity and to deter the prisoner himself, and others who hear of his punishment, from the commission of crime for the future.

With the editor of the *Pennsylvania Journal of Prison Discipline and Philanthropy*, we would say:

"We are far from being advocates of severity in prison discipline, but prisons are and should be places of punishment as well as reformation. While we show the convict, that the community still has an interest in his temporal and spiritual welfare, — while we offer an abundance of the proper means of moral instruction, and let the voice of kindness and sympathy gladden his dark hours, we would still have

him feel that the way of the transgressor is hard, and that there is a weighty penalty attached to the commission of crime. We have feared that of late there was a morbid kind of feeling on the increase in the community — a benevolence which selected only the offender against the laws and his fellow-men, as the especial object of attention; asking for him a degree of comfort — a possession of luxuries almost — and an exemption from mental trials and physical toils and rigid discipline, scarce known to thousands of the poor but worthy sons of poverty throughout our land. With such a sickly philanthropy we have no sympathy, and no faith in any great good ever to result from it."

In reverting to the hypothesis of Dr. Cleveland, to explain the operation of solitary confinement on the minds of the prisoners, we would suggest that if illustrations derived from life out of prison, can be available, they should be drawn from, as nearly as possible, analogous experience; as, for example, the effects of convent life on the health, and especially of the more ascetic orders, as the Trappists. Inquiry might be directed, also, into the details, as far as they have been given, of the condition of state criminals, or the victims of state jealousy, who have been kept in close confinement for a term of years.

The first effects of the change from an irregular and often debauched life of the criminal out of doors, to a quiet and regular and temperate one, with full employment, in the prison, are generally beneficial, as manifested in a decided and obvious improvement of the general health. In this respect, the convict is better off than large bodies of his fellow-men, who have recently engaged in new modes of life, of the kind which we have already sketched; and it is only, or generally, after a certain period, that he is a victim to serious disease. In the opinion of Dr. Cleveland and some others, the chief and most alarming suffering in this way, is in insanity: in that of Drs. Baly and Webster, as given in the first part of the present number of the *Bulletin*, it is tubercular consumption. Dr. Cleveland is disposed to think that "one cause of the disproportionate tendency to affections of the inmates of State Prisons, is found in the general disease

of the voice and consequent debilitation of the lungs, through the indispensable rule of continued silence." Dr. Webster, again, lays great stress on the inhalation of hot, dry air, as productive of this morbid state of the lungs. For ourselves, we have no faith in either of these etiologies. Dr. Baly takes the sounder view, when he attributes tubercular disease to "1st, deficient ventilation; 2d, cold; 3d, sedentary occupation, and want of active bodily exercise; 4th, a listless, if not dejected state of mind; and 5th, poorness of the diet." On this last point he adds: "The diet in the Millbank Penitentiary, and in the American Prisons, has been more abundant than that of the agricultural labourer."

A regular supply of wholesome food ought not, it seems to us, to be subjected to such frequent interruptions as are left to the officers in the Rhode Island State Prison, by the "Rules and Regulations." Few causes are so operative as this in producing dyspepsia, and a morbid or irritable state of the nervous system. Upon the whole, however, we are safe in saying, that the prisoners in some of our Penitentiaries are better fed and lodged, and breathe a more equally tempered air, and are less exposed to cold and humidity, than a majority of the working population; and they are incomparably better off in these respects, than tens of thousands of those engaged in manufacturing labour, or who are pent up in crowded and ill ventilated portions of nearly all great cities.

Dr. Cleveland's facts are more plausible than his reasonings, to show the bad effects of separate confinement on the mind, and its tendency to cause insanity:

"Of the forty prisoners committed while the strictly solitary system was in operation, ten, or one-fourth of the whole number (two of whom were blacks), manifested decided symptoms of derangement; seven so much so as to unfit them for labour for a longer or shorter period, and five were discharged insane, two of whom recovered, and three now remain unrestored to a sound state of mind.

"Of the nineteen committed since the sys-

tem was abandoned, three only, two whites and a black, have shown symptoms of derangement."

An analysis of these two classes of cases does not, however, prove so broad a contrast, to the disadvantage of the separate system, as would at first appear; and we are led to the conclusion that the data of the first period are entirely too scanty to justify the adverse inferences drawn by Dr. Cleveland, the more especially when we reflect that the so much longer and more enlarged experience in the Eastern State Penitentiary of Pennsylvania is in favour of this system. Of the four cases—a sketch of which is given by Dr. Cleveland to illustrate the pernicious operation of separate confinement—in two the intellect was deranged in the twelfth month, and two in the tenth month. One of the latter recovered, we are told; on being allowed the company of another convict in his cell; but his disease returned on his being, at his own request, left alone. A second restoration followed his being a second time indulged with the same society as before. The removal of his companion, after a period of four weeks, was not, however, this time, attended by any relapse. The first subject of insanity who was attacked, after a year's seclusion, continued in a state of delusion "about six months, when he gradually recovered his composure, with the mental faculties much reduced." Here, then, we find that two out of the four cases selected by Dr. Cleveland, recovered from their derangement in the prison, and remained secluded in separate confinement afterwards, one of them a year, the other more than two years and a half.

If we were to generalise from a few data, and assume that the earlier appearance of disease is evidence of greater violence of cause, we should be disposed, from Dr. Cleveland's own showing, to infer that the modified system was more liable to produce insanity, than that which he so strongly reprobates; since, of the three cases occurring among the inmates of the Rhode Island Prison, after the abrogation of

the separate and the establishment of the modified system, one became insane about the fourth month, the second in the sixth week, and the third in the sixth month of confinement. The average is less than four months; whereas the average in the four cases of separate confinement was just eleven months. The second of the three cases, died of dropsy in the chest, in the tenth month of his imprisonment. We are not told whether the other two have, with the advantages of limited society, got over the disease, as the two before mentioned did in their separate confinement. We do not urge this line of evidence as conclusive, and only enter on it at all in order to show the fallacy of Dr. Cleveland's arguments and illustrations in a similar line.

But, having already exceeded our limits, without being able to introduce the testimony and valuable information on Prison Discipline, furnished in the Report of the Inspectors of the Eastern State Penitentiary of Pennsylvania, including those of the Warden, and the former physician, Dr. Hartshorne, and the present one, Dr. Given, we must here stop, with the intention of resuming the subject in the next *Bulletin*.

Transactions of the New York State Medical Society.

Vol. VI. Part II. The contents of this portion of the Transactions are, as in the case of its predecessors, quite interesting. Spinal Irritation is the subject of the Annual Address, by Dr. Joel A. Wing. Following this are addresses before the Herkimer County Medical Society, on the Condition of the Medical Profession, by Dr. L. Green; before the Rensselaer County Medical Society, on the Progress of Medical Science; by Dr. Simeon A. Cooke; before the Columbia County Medical Society, on Medical Education. There is also a paper by Joseph Bates, entitled, Botany indispensably necessary to the Physician, and a Case of Lithotomy in a female, by Dr. A. Baker, Jr.

The Appendix contains various statistical returns—number of students in Medical Colleges in the State; list of Officers of Counties, Medical Societies, &c.

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[No. 7.]

Causes of Danger in Medical Studies.*

It has, however, been admitted, that there are facts in the earlier annals of the science, which *seem* to countenance the charge under consideration, that medical studies involve a lurking tendency to infidelity. I use the expression "*seem*," because in so far as the science itself is concerned, the imputation *must* be groundless. The principles of every science were established by the Divine Author of Christianity, and cannot, therefore, conflict with any of its doctrines or requirements. The legitimate tendency of all scientific investigations, is to lead the mind up to the Great First Cause, and to predispose it to bow to His mandates, whenever and howsoever they may be communicated. But that these studies are often perverted from their appropriate end, no one can deny. And this has perhaps happened as frequently in medicine as in any other science. Various reasons have been assigned for this fact.

1. There is the absorbing nature of the demands the profession makes upon the time and attention of its votaries, who are thereby deprived (as they suppose) of the opportunity for examining the subject of religion, and indeed rendered averse to it.

2. Successful scientific researches are apt, unless regulated by religious considerations, to inspire men with inflated views of the sufficiency of human reason on *all* subjects; and thus, from questioning the necessity, they may

easily come to deny the fact, of a Divine revelation.

3. The habit of reasoning from induction and analogy which belongs to every scientific physician, may unfit them, in a measure, for examining with impartiality the argument from miracles which constitutes so material a portion of the external evidences of Christianity.*

4. I say it with regret, but nothing has impressed my own mind more unpleasantly, in the little attention I have given to medical works, than the want of a distinct recognition of the Creator's power and agency, on occasions when it would not only be natural for the writer to refer to the Deity, but even when the idea was evidently in his own mind, and could not be suppressed without an effort. "The student of medicine," says an ingenious writer, "is often called on to bring his gift and deposit it, like the Athenian, on the altar of an 'unknown god.' A cloudy image, entitled 'nature,' is raised in the mind, to which high attributes of power, wisdom and goodness are often ascribed."† He might have added that the tendency of this habit, if persisted in, must be, in minds peculiarly constituted, to create a vague impression, which may ultimately grow into a conviction, that this obscure divinity, "nature," is really the only Deity.

5. Physicians are conversant with those scenes, suffering which, and any others, appeal to our sympathies.

* From the Rev. Dr. Boardman's Sermon to Medical Men.

* See Gisborne on Men, vol. ii., 194.

† "Is Medical Science Favorable to Skepticism?" An Essay, by James W. Dale, M. D.

These scenes do not necessarily blunt their humane feelings, but they can hardly fail of producing a decisive effect, for good or evil, upon their moral sensibilities. It may be worthy of consideration, whether familiarity with such spectacles has not sometimes assisted in fortifying them against the requisitions of Christianity, and even hastening them into infidelity.

6. The exposure of young men, while in training for the profession, to the temptations of large cities, and the consequent formation of dissolute habits, has, no doubt, been a hot-bed of skepticism.

7. The neglect of divine worship on the Sabbath, and of the other means of grace, has, it is to be feared, contributed in no small degree to foster infidelity among physicians. I shall enter into no argument on this point. It will probably be conceded, on all hands, that physicians frequently absent themselves from the sanctuary when no call of necessity or mercy pleads for it; that the occasional neglect of the house of God easily glides into a habit; and that this habit tends, by a natural process, to impair all suitable sense of religion, and to generate infidelity.

Such are some of the grounds on which the prevalence of skepticism among medical men has been explained. They show that however guiltless the science itself may be of the infidel tendency ascribed to it, there is a real danger in the path of the physician. They certainly furnish a strong argument in favour of an early and persevering attention to the claims of religion, on the part of the profession. This would not only secure them from the ruinous illusions of infidelity, but furnish a triumphant vindication of the stigma which has been affixed to it. Estimating the value of true religion to medical men, we must take into account its *salutary influence upon the temper*. I design no reflection upon the profession by this remark; it is poets, not physicians, who, according

to the proverb, constitute the "genus irritabile." The profession, as such, is probably not more infested with evil tempers than the other learned professions; and, if the fact were otherwise, it could excite no surprise; for physicians are certainly subjected to very great trials of temper. These proceed mainly from two sources — their patients and their professional brethren. The whims and caprices of the sick, and their officious relatives and neighbours, are brought to bear upon the physician in full force. He is blamed for his tardiness in responding to their call, when, perhaps, he stopped to prescribe for a patient whose life was in imminent peril. He comes too early or too late — too often, or not often enough; he gives the wrong medicines, or in wrong doses; he orders phlebotomy where calomel would answer, and administers a bolus where he should apply a cataplasm; his treatment differs from that of his predecessor — or, perhaps, accords with it — and in either case it is erroneous; his patient recovers, but he owes his recovery less to his skill than to a good constitution — or he dies, and then, by common consent, he has put him in his grave. I am not denying that physicians may, and often do err in all these ways, nor that complaints like these may, in many cases, be too well founded; but it is no less true that people are apt, in dealing with them, to be unreasonable, capricious, unfeeling and reckless of their professional reputation. It is trials of this sort to which I am alluding in this connection.

And yet even these are not always their worst trials. David, in speaking of the treachery of his confidential counsellor, Ahithophel, says — "For it was not an enemy that reproached me; then could I have borne it; neither was it he that hated me that did magnify himself against me; then I would have hid myself from him: but it was thou, a man, mine equal, my guide, and mine acquaintance." (Ps. 55: 12, 13.) So it is with physicians often. Their

"worst foes are those of their own household." They have to encounter not merely an open and generous rivalry; not merely the assaults of an avowed and, perhaps, malignant hostility; the former of which no liberal mind would deprecate, while the latter usually neutralizes itself, but the arts of a secret envy, which no sagacity can foil and no merit withstand. What these arts are it is not my place to specify. The fact is all that is essential to my argument. And I adduce the fact that physicians are exposed to peculiar trials of temper, as well from the unprofessional conduct of their brethren, as from the inconsiderateness, caprice and resentment of their patients, as a proof of the great importance of personal religion to them. Religion, it is true, cannot secure them an exemption from these vexations; although, by its various influences upon the character and reputation, it may contribute to lessen their number. But it can greatly enlarge their capacity of endurance, and fit them to bear what, without its aid, would be intolerable. The temper fostered by religion — the meek, patient, forgiving, benevolent, ingenuous temper everywhere inculcated in the Bible, not simply as a graceful appendage of Christianity, but as one of its essential elements — is the best safeguard a physician can have against the wrongs we have been contemplating, and his best antidote to them when they are inflicted. A man with this temper will be uniformly just to his brethren and his patients. He will be slow to give, and equally slow to take, offence. He will be free from envy and suspicion, and will put the best construction upon all doubtful passages. He will be as jealous of his professional as of his popular reputation; and scorn to extend his practice by conniving at quackery, or catering to the empirical vagaries of his patients. Instead of attempting to supplant his competitors by artifice or fraud, by malign insinuations, or sneers at their mistakes, he will treat them, on all occasions, with the respect that

is due to them, and rely for success not so much upon subverting their reputation, as upon his own assiduity and skill. Where he has perpetrated a wrong, he will not be ashamed, on discovering it, to acknowledge the offence, and make every reparation in his power.* He will be careful to observe the established etiquette of the order; and avoid infringing that code of ethics which, though unwritten, is well understood, and the inflexible maintenance of which, even in its apparently trivial provisions, is of vital importance to the dignity and success of the profession. All this, and much more than this, a physician under the predominant influence of true piety will do, not because his interest will be promoted by it, nor simply because it is his duty to do it, but also because it is the very course to which his feelings prompt him, and which he finds his happiness in pursuing. That a physician of this character will ordinarily escape many of the annoyances and grievances which others encounter, and that when they do occur he will be better prepared to endure them, is too evident to stand in need of argument. I do not hesitate, therefore, to adduce the salutary influence of religion upon the temper, as a reason why medical men should give their early attention to it.

A still weightier motive may be found

* There is a striking illustration of this recorded in the life of the celebrated Dr. Cheyne. He describes his "*Fluxionum Methodus Inversa*," which had procured his election to the Royal Society, in 1705, as having been brought forth in ambition, and bred up in vanity. "My defence of that work," he adds, "against the learned and acute Mr. Abraham de Moivre, being written in a spirit of levity and resentment, I most sincerely retract, and wish undone, so far as it is personal or peevish, and ask him and the world pardon for it; as I do for the defence of Dr. Pitcairn's *Dissertations* and the *New Theory of Fevers*, against the learned and ingenious Dr. Oliphant. I hereby condemn and do set all personal reflections, all malicious and unmannerly terms, and all false and unjust representations, as unbecoming gentlemen, scholars, and Christians; and disprove and undo both performances, as far as in me lies, in everything that does not strictly and barely relate to the argument."

in the fact, that religion *imparts the spirit and fosters the habit of prayer*; and no class of men stand in more need of Divine illumination than physicians.

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ON THE MODE OF OPERATION, AND THERAPEUTICAL APPLICATION OF IODINE AND ITS PREPARATIONS.

By THOMAS BARBOUR, M.D.,
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My object in making this communication is, to give the results of my experience in relation to an important remedial agent, which has, as yet, excited but little attention in our country; against which there is, on the part of many, the strongest prejudice; but which, from extensive observation, I am convinced, is possessed of very valuable virtues; and is capable, if judiciously administered, of relieving many diseases, especially of a chronic character, which, under the ordinary modes of treatment, are very difficult of cure, if not incurable. I will consider, 1st, the *modus operandi* of iodine, in order that the great leading indications of treatment which it is capable of fulfilling may be more clearly understood; and, 2d, its application to disease; in illustration of which I will *briefly* detail some interesting cases which have come under my observation.

Iodine, whether administered internally, or applied externally, is absorbed into the system, and being conveyed along the numberless channels of the circulation, down to the ultimate capillary vessels, permeates every organ and tissue of the body. Its presence has been detected by means of unerring tests, in the blood and various secretions, as the urine, sweat, milk and

paper, without exhibiting any novelty of application in the use of iodine, or of iodinic preparations in diseases, presents, however, an instructive summary of many of the facts in relation to this subject, which entitles it to the attention of the practising physician. — *Ed.*
BULL. MED. SCIENCE.

It is *generally* supposed to exert its salutary influence by augmenting the activity of the absorbent system, and hence it has been mostly used in diseases implicating the absorbents, as scrofula, or in which solid growths or effusions existed, the removal of which could only be effected through their agency. This is, however, too limited a view of its mode of operation, and readily accounts for its limited application. I am disposed to take a much more comprehensive view of its action as a therapeutic means. In view of its various effects upon the constitution, I cannot doubt but that it exercises an important controlling influence over the capillary vessels of every affected part; modifying the vital principle, and inducing material changes in the nutrition in the various tissues throughout the whole human system. It is only upon this supposition, I conceive, that we can rationally explain the various effects which are attributed to it; how it acts as a *secernent*, promoting healthy secretions; as an *alterant*, causing a gradual change from a morbid to a healthy action in a part; as a *liquefacient*, or *resolvent*, melting down, as it were, morbid growths; and as a *sorbefacient*, increasing the activity of the absorbents, in order to the removal of adventitious growths, or effusions. Assuming that this view of its *modus operandi* is correct, it can readily be conceived that it must be capable of doing much good in every form of chronic disease in which lesions of circulation, nutrition, or secretion exist.

When used *incautiously*, this potent remedy may do much harm. Being in large doses, especially when long continued, decidedly irritant to the mucous membrane of the alimentary canal, and being powerfully excitant to the absorbents, it will, if thus exhibited, induce severe gastric and enteric irritation; and, according to some high authorities, absorption of the testes and mammary gland. In consequence of the ignorance of its proper mode of administration, or the most culpable

negligence on the part of some practitioners, these sad effects have sometimes resulted; and hence many, at the present day, are unwilling to give it a trial. With equal reason might prejudices exist against mercury, arsenic, antimony, and many other highly valuable remedial agents; yet no enlightened physician could be justified in discarding them from his practice in diseases in which past experience had proved them to be efficacious.

We have the high testimony of Lugol, Magendie and others, whose experience with the use of this agent was very extensive, that no unfavourable effects were ever observed by them. I have, during the last twelve years, administered it very often, and in a great variety of diseases and constitutions, and I can, in truth, say, that no bad effect has ever been observed by me; but that, on the contrary, I have been delighted with its curative powers.

I will now proceed to the consideration of the most important part of my subject, namely, the therapeutical application.

I propose to enumerate the various diseases in which I regard iodine and its preparations particularly valuable; give an outline of my mode of treatment, with the formulæ I most approve; and, occasionally, illustrate by a case.

1. *Scrofula*. — If there is a remedy in the long catalogue of the *materia medica* that is entitled to the appellation of specific, it certainly is iodine, in the treatment of ordinary scrofula, scrofulous ophthalmia, and white swelling.

To illustrate its efficacy in my hands, I select one interesting case from several that have come under my care. Mrs. H. consulted me in 1843: she was of a decidedly scrofulous habit; had had numerous glandular swellings to form, ulcerate and cicatrize on the side of the neck, at various times, during a period of ten years. At the time I saw her, she was much emaciated, and had several large, ill-conditioned scrofulous ulcers, in the course of the cervical glands. She had been subjected to a great variety of treatment, but without benefit. I could not ascertain whether she had taken iodine in any form. Believing, however, that it would afford her relief, I

put her upon the following simple treatment: I gave her, morning, noon and night, 20 drops of the aqueous solution of iodine, made according to the following formula: Iodine, 10 grains; hydriodate of potassa, 20 grains, to 1 oz. of distilled or rain water. I also applied to the hardened tumours, and around the bases of the ulcers, the ointment of iodine, as follows: Iodine, 20 grains; hydriodate of potassa, 30 grains, rubbed with 1 oz. of simple cerate. The muriated tincture of iron, 20 drops thrice daily, was given as a tonic; and a nourishing diet, and free exercise in the open air recommended. Under this course, she rapidly improved; and in two months from its commencement there was no tumour or ulcer to be perceived. Her health, so far as I have been able to learn, has continued good ever since.

In scrofulous ophthalmia, I would recommend from 5 to 10 drops of the above solution, or the same quantity of the syrup of the iodide of iron three times a-day, in an ounce of the infusion of sarsaparilla; and as an application to the inflamed tarsi, the ointment already advised. The ointment should be applied morning and night, by means of a camel's hair pencil. Should ulceration of the cornea exist, which is frequently the case, a pointed piece of nitrate of silver should be gently applied, once a-day, to each ulcer; and in a few minutes after, the eyes ought to be bathed with a little tepid milk and water, or, what is excellent, a tea made by pouring warm water on a small quantity of the pith of sassafras. Under this course of treatment, with generous diet, and the enjoyment of pure fresh air, the worst cases of scrofulous ophthalmia will generally be relieved.

In white swelling, which is, in a large majority of cases, a scrofulous affection of the joints, either simply inflammatory or ulcerative, I make use of the aqueous solution already prescribed, 20 drops thrice daily; or 10 drops of the syrup of the iodide of iron; and apply the saturated tincture of iodine over the whole of the affected joint. These means, in connection with purgatives, as jalap and cream of tartar, occasionally, and tonics, will generally prove successful.

2d. *Chronic visceral inflammation, indurations, and enlargements*. — In chronic inflammation, induration and enlargement of the spleen and liver, which are very common sequelæ of intermittent and remittent fever, our most efficient means are iodine and mercury combined. The following combination I have found of very great

value : Proto-iodide of mercury, 20 grains ; socotrine aloes, 30 grains ; extract of hyosciamus, 1 drachm, made into 24 pills, of which one may be given at first every night, then every other night. At the same time I administer 5 drops of nitro-muriatic acid mixture in an ounce of the infusion of quassia or gentian, three times daily, and direct the body and extremities to be well sponged morning and night with a portion of the same mixture, diluted with 4 or 5 parts of water.

This plan of treatment has been remarkably successful in my practice. In the case of Mrs. H., in which I lately adopted it, a very large tumour was easily felt in the left hypochondriac region, and a still larger in the right, and partly in the epigastric, with general derangement of health, I diagnosed induration and enlargement of the spleen, and left lobe of the liver. The improvement in this case was very rapid ; the visceral enlargements, day by day, perceptibly diminished, and in about two months they totally disappeared, and her general health became re-established.

In indolent tumours in the mammary gland, the very best application that can be used is the ointment recommended under the head of scrofula. It should be gently applied over the whole extent of the tumour morning and night. It will rarely fail to cause its dispersion in a few weeks.

3d. *Diseases of the urinary organs.*—I have witnessed the very happiest effects from the use of iodine variously combined in chronic nephritis, and cystitis, affections which not unfrequently baffle all the common modes of treatment. A most interesting case came under my care in 1842, which very strikingly illustrated the curative powers of this valuable remedy. Mr. G., the subject of it, a young man about twenty years of age, informed me that he had been greatly afflicted, for about four years previously to my visiting him, with disease of his kidney and bladder, as was supposed by the physicians whom he had consulted, and which had confined him nearly the whole of that time to his bed. His prominent symptoms during this period had been excruciating pain in the left lumbar and hypogastric regions ; excessive irritability of the bladder, inducing an almost constant disposition to evacuation ; copious mucous, purulent and bloody discharges from the bladder ; great pallor and emaciation, and regular hectic fever. He had been subjected to a great variety of treatment without avail. When I saw him he was in a

most miserable condition, all the symptoms above detailed still existing. My diagnosis was chronic nephritis of the left kidney, with suppuration of the gland ; and chronic cystitis, with ulceration of the mucous membrane. I administered to him the following combination : Proto-iodide of mercury, 20 grains ; socotrine aloes, 30 grains, and extract of cicuta, 60 grains, made into 24 pills, of which one was given, at first, morning and night, then every night : I also gave, three times a day, 20 drops of the muriated tincture of iron, in the infusion of buchu. The warm hip-bath was occasionally used, and tartar emetic ointment was applied, as a counter-irritant, over the left lumbar and hypogastric regions. Under this course he soon began to improve ; the pain gradually diminished ; the irritability of the bladder became relieved, and the mucous, purulent and bloody discharges, by degrees, entirely ceased. The hectic fever disappeared in proportion to his general improvement. In about four months after I first visited him, to the astonishment of all who saw him, he was comparatively well, having regained, to a considerable extent, his flesh and strength ; and being able to ride, or even walk, some distance in the neighbourhood in which he resided : in about twelve months, his health was entirely restored.

In the chronic mucous inflammation of the bladder in old persons, the above treatment is exceedingly valuable. In enlargement of the prostate gland, besides the internal use of the above pill, I would advise the application of iodine ointment, as directed under the head of scrofulous tumours, twice a-day, over the perineum.

4th. *Diseases of the Uterus.*—In chronic inflammation, with induration, and enlargement of the uterus, iodine is especially valuable. I usually prefer the proto-iodide of mercury in combination with extract of cicuta and aloes, according to the above formula. When the neck, and especially the mouth of the womb is in a scorbutous condition, which is most apt to occur about the period of the disappearance of the menses, when the frequent congestions of the organ, not being relieved by the usual flux, tend to the development of chronic inflammation, I apply, in addition to the above prescription, the following ointment, twice or three times a-day, to the os uteri, by means of a camel's hair pencil introduced through a speculum : Proto-iodide of mercury, 30 grs. ; extract of stramonium, 1 dr. ; simple cerate, 1 oz. An interesting case

came under my care last summer, during my superintendence of the female ward of the St. Louis Hospital, which strikingly proved the efficacy of the above treatment. Upon examination per vaginam, it was apparent that there was a decided induration and enlargement of the uterus, with general tenderness of the organ, and thickening and induration of the mouth, with occasional lancinating pains. If this case had not been speedily relieved, it, most probably, would have terminated in regularly developed cancer uteri. The patient improved from the commencement of the treatment, and, in about six weeks after her introduction into the hospital, left in good health. I think it advisable, in these cases, to use, in connection with the internal and external use of iodine, occasional topical depletions, warm hip-baths, and counter-irritation over the pubic region, by means of tartar emetic ointment, or blisters to the inner sides of the thighs.

In dysmenorrhœa, which I suppose to be dependent on chronic inflammation of the mucous membrane of the uterus, I place great confidence in iodine, variously combined, as a means of radical cure. I administer the pills of prot. iodide of mercury, extract of cicuta and aloes, as above, morning and night, during the interval between the menstrual periods; and the muriated tincture of iron as a tonic, in the proportion of 20 drops three times a-day; and order the tepid or cold shower-bath to be taken, at least once a-day.

In amenorrhœa, and chronic suppression of the menses, I would particularly recommend the following combination, which, if sufficiently persevered in, will very rarely fail to restore the menstrual secretion: Prot. iodide of mercury, 20 grs.; socotrine aloes, *exsiccated* sulphate of iron, and gum myrrh, each 30 grs.; oil of savine, 20 drops, made into 24 pills, of which one may be given morning, noon and night. In connection with this prescription, I recommend free exercise in the open air, and the tepid or cold shower-bath. I attended a case about two years since, in which the efficacy of iodine was very decidedly proved. She had not menstruated for six or seven years, and presented quite a chlorotic aspect. Under my treatment, she menstruated *partially* in about six weeks; after which, she became quite regular, and her general health very much improved.

5th. *Diseases of the Chest.*—I have found iodine of very great value in most of the chronic diseases of the chest, particularly

in chronic bronchitis; asthma; incipient phthisis; pneumonia, with hepatization, and chronic pleuritis, with infusion. In chronic bronchitis I administer, thrice daily, 20 drops of the solution of iodine and hydriodate of potassa, given under the head of scrofula, in from a tea-spoon to a dessert-spoonful of an expectorant syrup, which I value highly, and which I prepare by pouring half a gallon of boiling water on 1 oz. each of squill, seneka and lobelia; simmering down to a pint; straining, then adding a pint of honey, and boiling down, slowly, to a pint. In connection with this, I usually apply the croton oil repeatedly to the chest as a counter-irritant. I will briefly relate one case in illustration of the efficacy of the above treatment:—Mrs. M., aged about fifty-five, had been afflicted for several years with distressing cough, dyspnœa, and purulent expectoration.—When she consulted me, these symptoms existed in a most virulent degree, with emaciation, hectic fever and night-sweats. I used the above remedies; and, as a tonic, 5 drops, three times daily, of nitric acid in the infusion of the wild cherry-tree bark. Her improvement was rapid, the cough and dyspnœa becoming soon diminished; the expectoration greatly lessened, and altered in quality; and the hectic fever, and night-sweats, ultimately entirely disappeared. She gradually regained her flesh and strength; and is now, comparatively, in the enjoyment of good health.

The foregoing treatment is also applicable to asthma.

In incipient phthisis, I administer the aqueous solution of iodine, as above, with 20 drops of tincture of digitalis, thrice daily; a pill of extract of cicuta, 2 to 3 grs., every night, to quiet irritation; 5 drops of nitric acid, in the infusion of wild cherry bark, as a tonic, three or four times a-day, and apply the croton oil repeatedly to the chest as a counter-irritant. My experience justifies me in reposing great confidence in the above plan, for the prevention of the development of tuberculous consumption; and for its mitigation, when fully developed.

In pneumonia with hepatization, and pleuritis with effusion, I regard the following combination of very great value: Hydriodate of potassa, pulverized squills, and extract of cicuta, each half a drachm, ipecac. xv. grs., made into 20 pills, of which one should be given every four or six hours. In connection with this I give the nitric acid and infusion of wild-cherry bark, as

above directed, and apply the tartar emetic ointment to the chest as a revulsive.

A most interesting case came under my care in 1842, in which the above course of treatment was adopted with entire success. Miss T., aged about thirty, had an acute attack of pneumonia, for which nothing of an efficient character was done for nearly ten days, when the symptoms becoming alarming, I was sent for. I found her propped up in bed, with oppressed and hurried respiration, anxious and depressed countenance, very feeble pulse, coolness of the extremities, and a copious clammy perspiration. The physical signs afforded by percussion and auscultation convinced me that nearly the whole of the right lung was completely hepatized. I, in the first place, gave her carb. ammonia, half a drachm; tartar emetic, 2 grs.; gum camphor, 40 grs.; mucilage of gum arabic, 4 oz., of which mixture she took a table-spoonful every two or three hours. I also allowed her to take wine with some freedom, and a strong infusion of seneka, 1 oz. to the pint of water, and covered the whole of the right side of the chest with a blister. These means ultimately caused full reaction of the system. The hepatization, however, continued. I then administered the above pill; continuing the use of the camphor mixture, carbonate of ammonia, and seneka infusion, for several days. The effect of this treatment was highly gratifying; the lung, by degrees, became permeable to air; the healthy vesicular murmur became audible throughout the whole chest; and in about three weeks from my first visit, she was restored to her wonted health.

6th. *Dropsy*.—Having already considered hydrothorax, in connection with chronic pleuritis, I shall now confine my remarks to ascites and anasarca. In ascites, dependent on visceral obstructions, as of the spleen or liver; or on chronic peritoneal inflammation, the following combination is very valuable: Proto-iodide of mercury, 20 grs.; squill, 30 grs.; extract of taraxacum, a drachm, made into 24 pills, of which one should be given morning, noon and night. In connection with this, some active hydragogue cathartic, as jalap and cream of tartar, may be advantageously given.

In anasarca, occurring after scarlet fever, in which there is more or less vascular excitement, the following is a valuable prescription: Hydriodate of potassa, and pulverised squill, each half a drachm; digitalis, 20 grs., made into 20 pills, of which one should be given every four or six hours.

If dependent on debilitating diseases, as hemorrhages or diarrhoea; or on phthisis, or diseases of the heart, the syrup of the iodide of iron, in the proportion of 10 drops, with 20 drops of the tincture of digitalis, three or four times a-day, would generally afford much relief.

7th. *Chronic Rheumatism*.—I would especially recommend the following combination as of great value in every form of chronic rheumatism: Hydriodate of potassa, 1 dr.; pulverised colchicum, 1 dr.; extract stramonium, half a drachm, made into 30 pills, of which one should be given morning, noon and night. During the administration of the above, the warm-bath should be daily used; and the affected parts well rubbed, morning and night, with strong stramonium ointment, formed by boiling the fresh leaves of the plant with lard, and adding a portion of yellow rosin and beeswax, to make it of good consistence.

8th. *Syphilis*.—There is no remedy, in my opinion, comparable to the proto-iodide of mercury, in the treatment of secondary syphilis. I usually administer the pills, already recommended in visceral diseases, morning, noon, and night; and in connection with them, I give 5 drops of nitro-muriatic acid mixture, in the infusion of sarsaparilla, three or four times daily.

For the dispersion of indolent buboes, or the removal of syphilitic periostitis, the following ointment may be most advantageously used, during the administration of the above combination internally: Proto-iodide of mercury half a drachm; extract of stramonium, 1 dr.; simple cerate, 1 oz. This ointment should be gently rubbed over the buboes and nodes, morning and night. If there is ulceration of the throat, of syphilitic character, the tincture of iodine, applied by means of a camel's hair pencil, is a very useful remedy.

9th. *Ozena*.—In this most disagreeable affection of the pituitary membrane, in which the bones of the nose are sometimes involved, and which is either scrofulous or syphilitic in its character, the aqueous solution of iodine, already recommended, is a valuable means of cure. It should be given in the proportion of 20 drops, in infusion of sarsaparilla, three times daily. The same solution, diluted with four or five parts of water, may also be used as an injection into the nasal passages.

10th. *Chronic Cutaneous Diseases*.—I am disposed to think, that the preparations of iodine afford us a much better prospect of success in the treatment of most of the

chronic diseases of the skin than any other remedies with which we are acquainted. A good mode of administration is the hydriodate of potassa, in the proportion of 5 grs., in the infusion of sarsaparilla, three or four times a-day. From the experience of others, and from my own limited experience, I think very favourably of the hydriodate of arsenic and mercury, a preparation lately introduced to the notice of the profession by Mr. Donovan, in the Dublin Medical Journal. Possessed as it is of the combined virtues of iodine, arsenic and mercury, the two last of which have for a long time enjoyed high reputation in the treatment of cutaneous diseases, I do not doubt but that a more extended trial of it will confirm the author's good opinion of it. It may be given in the proportion of 5 drops, three times daily, in the infusion of sarsaparilla. I have lately made use of it, as a topical application in superficial cancer of the face, with entire success.

It was my design to consider, somewhat extensively, the topical applications of iodine and its preparations; but as this communication is already as lengthy as the limits of the Journal justify: and as I have, in treating of its internal administration, incidentally referred to its topical application in scrofulous tumours, scrofulous ophthalmia, scirrhus of the uterus, indolent buboes, nodes, ulceration of the throat, ozena and indolent mammary tumours, I shall close by directing attention to the following:—

1st. *Tinea Capitis*.—We are indebted to Professor Graves, of the University of Dublin, for the recommendation of the tincture of iodine in this most disagreeable affection of the scalp. He advises that the hair should be cut off closely, by means of scissors; that the affected parts should be then carefully washed with castile soap and water, in order to soften and separate the scabs; and that, twice a-week, the tincture of iodine should be applied, by means of a camel's hair pencil; after which, a spermaceti plaster should be put on. I place great confidence in the efficacy of this treatment.

2d. *Indolent Ulcers, whether simple, scrofulous, or syphilitic*.—Iodine unquestionably exerts a most valuable controlling influence over ulcerative action: the tincture of iodine, applied with a camel's hair pencil, is the best form I know of. I have also used, with good effect, the ointment of proto-iodide of mercury, and extract of stramonium, already recommended. If the ulcers are upon the extremities, a bandage

should be applied after each application of the tincture, or ointment.

3d. *Dropsy of the Knee Joint*.—The tincture of iodine is a most excellent application in dropsical affections of the joints. It should be brushed over the whole joint, by means of a camel's hair pencil, morning and night. After each application of the tincture, either a well adjusted knee-cap, or a bandage, should be worn as tightly as can be borne. I saw an interesting case in the female ward of the St. Louis Hospital, in which the above plan produced excellent effects. The knee joint was enormously distended, and there appeared also to be enlargement of the ends of the bones. Under the treatment recommended, there was a rapid diminution of the swelling; and at the time I left the hospital, there was a good prospect of entire removal. A remarkable circumstance, which attracted my attention in this case, was, the copious discharge of a fluid, similar in appearance to the synovial, from the surface of the tumour, though there evidently was no communication with the cavity of the joint.

In conclusion: I will express the earnest hope, that every member of the profession who may read this communication, and who may have, heretofore, been prejudiced to the use of iodine, or unacquainted, *practically*, with its curative powers, may be so far influenced by my humble testimony in its favour, as to be induced to give it a trial in the various affections which I have enumerated. Also, I shall feel myself richly rewarded for any trouble which its preparation has cost me; believing, as I should conscientiously do, that I will thus have conferred no small benefit on suffering humanity. — *Missouri Med. and Surg. Jour.*

CYANOSIS.*

In the July number (vol. iii., page 25) of the American Journal of the Medical Sciences, is contained a very able paper by Dr. Morton Stillé on *Cyanosis, or Morbus Cæruleus*, in which the writer has presented a careful analysis of the morbid appearances that were presented by the various cases on record, calculated to throw light on its pathology. The facts which Dr. Stillé has adduced prove—

1st. That Cyanosis may exist with

* Report of Dr. Condie, on Diseases of Children. In Summary of the Transactions of the College of Physicians of Philadelphia.

out admixture of the venous and arterial blood.

2d. That there is no proportion between the Cyanosis and the degree in which the blood is mixed.

3d. That complete admixture of the blood may take place without Cyanosis.

4th. That the variation in the extent, depth, and duration of the discoloration is inexplicable by the doctrine of the admixture of the blood.

Dr. Stillé maintains that in every instance, Cyanosis is dependent upon a partial or complete contraction or obstruction, or upon an imperforation, of the pulmonary artery; that this lesion alone will account satisfactorily for the discoloration of the skin and the dyspnoea; that it is present in every case of Cyanosis—or, if absent, that there is always some other efficient cause for the disturbance of the pulmonary circulation; and, finally, that the lesion referred to never exists without the concurrence of Cyanosis.

These several positions are very fully borne out by the series of facts adduced in the paper referred to.

A very remarkable case of Cyanosis is related by Professor Huss, of Stockholm, which very fully sustains the views advanced by Dr. Stillé.

A lad, six years of age, who had exhibited from his birth the usual phenomena of Cyanosis, was admitted into the "Hôpital des Séraphins." The colour of his surface was dark blue, and that of the mucous membrane of the mouth, blue of a brighter tint. He was affected with frequent attacks of palpitation of the heart, and of hæmoptysis, and occasionally of convulsions. During the short period he resided in the Hospital, the attacks of hæmoptysis increased in frequency, and at the end of a few months, in one of these attacks, he died.

Upon the examination of the body, the heart was found about triple the size of the patient's fist; the enlargement being principally confined to the right ventricle, behind which was situated the left ventricle, like an appendix to it. The foramen ovale was closed; but,

at the upper part of the inter-ventricular septum, there existed a semilunar opening of nine lines in extent, establishing, thus, a free communication between the two ventricles, and directly with the aorta. Four and a half lines interior to this opening, the orifice of the pulmonary artery formed, in the right ventricle, a circular opening, two lines in diameter, with a cartilaginous margin. Two lines within this opening, there existed two folds, resembling semi-lunar valves. The sinus of Valsalva formed a pouch, ten lines in diameter, filled with fibrinous coagula, organized and adherent to the parietes, so as to reduce the diameter of the canal to the same size as the orifice. The length of the pouch was six inches. No vestige of the ductus arteriosus remained.

In the Boston Medical and Surgical Journal for October, 1844, Dr. Jennings has related a case of Cyanosis, which, although it occurred in an adult, twenty-one years of age, is calculated to shed light upon the pathology of this disease; it, also, sustains the views of Dr. Stillé.

The patient had not enjoyed good health from birth. His entire surface was of a dark purple colour, but especially his face and the extremities of his fingers; which colour was never entirely absent. He was affected with universal anasarca. After a little more bodily exercise or mental emotion than usual, his respiration became hurried, and he was attacked with cough, palpitation, and a sense of suffocation, accompanied by a blackened appearance of the face, as from strangulation. The patient died suddenly.

On examining his body, the pericardium with its contents was found to occupy the whole anterior portion of the thorax, the lungs being pressed by it completely backwards. Its parietes were thickened; and in its cavity were contained upwards of two quarts of a slightly yellowish serum. The right auricle of the heart was hypertrophied, having three times its usual thickness. The free edges of the tricuspid valve were covered with cartilaginous cauliflower

excrecences, to such an extent as very considerably to diminish the normal size of the right auriculo-ventricular orifice. The right ventricle was in a state of concentric hypertrophy—its walls being one inch in thickness, and half an inch at their thinnest part. The orifice of the pulmonary artery was so far contracted as scarcely to admit a crow-quill. The pulmonary extremity of this opening—which seemed drawn out to a point—was covered, throughout its entire circumference, with small, spongy cauliflower excrescences. The parietes of the left auricle and ventricle were of normal thickness, although their cavities were of a smaller size than natural. The foramen ovale was open, its diameter being half an inch. The ductus arteriosus was obliterated; but the umbilical vein and ductus venosus were still open.

MENINGITIS ENCEPHALICA.*

Under the name of *Meningitis encephalica*, Dr. Brockman has recently described a peculiar form of cerebral disease incidental to childhood, in which the membranes of the medulla oblongata and pons varolii are chiefly affected.

Dr. B. has met with fourteen cases of this affection. It was, at first, observed by him as a sequel of scarlatina, but subsequently he has seen it to occur most frequently as an idiopathic affection.

It is sometimes associated with general disease of the brain; at others, it is uncomplicated. Notwithstanding, in its earlier stages, it is unattended by any serious symptoms, it is an affection fully as dangerous as cerebral meningitis. The first stage, or that of simple hyperæmia, generally continues for one or two days. The child is dull and heavy, and the occiput is often hot; the bowels, however, are regular; there is no vomiting; no intolerance of light, nor any disturbance of sleep. The general dullness of the patient, and vague complaints of some uneasy sensation in the head, increase as the inflammatory stage sets in; the heat of the occiput is augmented; the head becomes retracted, as in the ordinary cases of acute hydrocephalus; and convulsive twitchings of the limbs occur, similar to the effects of slight electric shocks, which recur every few minutes while the patient is awake, but cease during sleep. The general febrile symptoms continue during the third stage; the pulse, however, diminishes in frequency and fulness, but does not become either irregular or intermittent.

* Ibid.

The general disquietude of the child subsides, by degrees, into a comatose condition, in which the head becomes still more retracted, but unattended with strabismus, or any morbid condition of the pupil; the peculiar air of stupidity that characterizes hydrocephalic patients, is wanting. Two pathognomonic symptoms, however, indicate the occurrence of the stage of effusion. One of these is deafness; the other, is difficult articulation, and difficulty in moving the tongue—both of which occur at the same time, probably from paralysis of the motor nerves of the tongue. The deafness and affection of the tongue usually occur suddenly; sometimes they are first observed upon the child awakening from a quiet sleep. They are, according to Dr. Brockman, the earliest and most certain indications of the occurrence of the effusion. This stage continues sometimes for three, and sometimes for fourteen, days. Its termination is in fatal paralysis, the occurrence of which is often preceded by various singular nervous phenomena—as sudden pauses in the respiration, or equally sudden syncope. In some cases, however, the paralysis does not follow, but the anomalous symptoms subside, and the patients gradually recover: until, indeed, the paralytic stage is fully established, the recovery of the patient is still possible.

In the uncomplicated cases of the disease, upon examination after death, the cerebrum in general presents an extremely pallid and anæmic condition, in striking contrast with the cerebellum; the vessels of which are turgid with blood, while its substance, also, is often in a state of marked hyperæmia. The hyperæmia increases in intensity towards the central portions of the encephalon; and the membranes covering the pons varolii and medulla oblongata are found in a most decided state of inflammation; the portion of inflamed membrane is perfectly isolated, and not more, usually, than a square inch in extent—the membrane of the cerebellum being entirely free from any indications of inflammation. There is ordinarily an effusion of a serous fluid into the sub-arachnoid tissue; sometimes to the extent of several ounces; occasionally a gelatinous matter is effused, and, in some cases, the effusion is of a purulent character.

This form of the disease is most frequently observed in children from three to ten years of age, and who had previously enjoyed good health.

The treatment recommended by Dr. Brockman, in its first two stages, is depletion, by leeches to the posterior part of the head, cold applications to the head, and the free administration of calomel, which latter may be continued during the stage of effusion. Here, however, it becomes necessary to support the strength of the patient; for this purpose ammonia is directed by Dr. B., but he remarks that, in some cases, the administration of wine may be required. According to his experience, powerful counter irritants, as a large blister, or

the actual cantery, prove, also, sometimes beneficial.

PERITONITIS.

Dr. Pepper read the following account of a case of Peritonitis, with perforation of the *appendicula vermiformis*, caused, apparently, by the impaction in the latter of a grape seed.

Mrs. H——, aged 45, the mother of a numerous family, had enjoyed uninterrupted good health up to the latter part of January, 1845, when, for the first time, she complained of some lassitude, and occasional uneasy sensations in the right iliac region. From the 2d of February up to the 5th of the same month, her bowels had been constipated, and she accordingly took a dose of oleum ricini, followed by an enema of senna and sulph. magnesiae—without, however, producing the desired effect. On Thursday, the 6th, about 3 A.M., she was suddenly seized with severe pain in the right iliac fossa, attended with great nausea and vomiting, prostration of strength, and collapsed countenance.

The patient was now for the first time confined to her bed, and treated by a charlatan, under whose care she continued up to February the 8th, without any important change in her symptoms.

Dr. E. Peace was now requested to visit the patient, and found her in the following condition:—pulse 130, and feeble; extremities warm; features collapsed; skin moist, but of a natural temperature; total loss of appetite, but no vomiting; abdomen tympanitic. She complained of extreme pain about the umbilicus, and also of great tenderness in the right iliac fossa. An ounce of oleum ricini, combined with sulph. morph. gr. ss., was now administered, but could not be retained; and a similar dose was repeated several hours after. The patient was also placed in a warm bath, and saline enemata were freely used, without, however, evacuating her bowels, which had now been in a constipated condition for the last five days.

Whilst under the above treatment, the tympanitis and pain diminished, but the patient gradually became more feeble, and expired the following morning, February the 9th, at 5 o'clock.

Post-mortem examination the following day. Present, Drs. Peace and Garrison.—Abdominal muscles covered with a thick layer of adipous matter. On opening the peritoneum, there was an escape of fetid gas, having a somewhat gangrenous odour;

and the serous membrane throughout presented evident traces of recent inflammation. In the right iliac fossa, several convolutions of the small intestines were united to each other, as also to the caput-coli, by means of strong, false membranes; and, at this part, the peritoneum was bathed in pus. The *appendicula vermiformis* was greatly thickened, and adhered, throughout its whole extent, to the lower part of the ileum; near its free extremity, there was an ulcerated opening, about one-fourth of an inch in diameter.

The lower part of the ileum, in connection with the cæcum, was now removed for more minute inspection. On laying open the appendix, it was found to contain, at its perforated extremity, a small mass of indurated fecal matter, in one end of which was imbedded a large grape-seed; its mucous membrane was black, and in a gangrenous condition—whilst the other coats were softened and greatly thickened. The ileum, as also the caput-coli, were apparently perfectly healthy. The pelvis contained several ounces of a thin brownish fluid, having a somewhat fecal odour. Intestines distended with flatus; other viscera not examined.

From the previous history, it is highly probable that the grape-seed was the exciting cause of the inflammation, which ultimately led to ulceration and fatal perforation of the appendix. Such cases can no longer be considered as extremely rare, since numerous instances of a somewhat similar character are now to be found on record. In the *Medical Examiner*, vol. i., p. 655, is reported a case of fatal peritonitis from two perforations of the appendix, caused, most probably, by "a gritty, brown substance, about the size of a bean." In the same journal, vol. iii., p. 580, may be found a case of chronic inflammation of the appendix, which ultimately terminated in a fistulous opening through the abdominal parietes. In this case, the appendix was thickened and dilated, and the shell of a hazel-nut was impacted in its middle portion.—*Ibid.*

CASE OF COMPOUND FRACTURE OF THE LEG, IN A PATIENT OF THE HEMORRHAGIC DIATHESIS.*

By W. DAVITT, Esq., Surgeon, Wimborne, Dorsetshire.

Henry Hanson, aged 27, a tall and not very

* *Provincial Medical and Surgical Journal* April 25, 1845.

muscular man, a harness-maker by trade, was admitted into the hospital of the Union Work-house in this town, under my care, on Sunday, the 24th of September, 1843, with a very severe compound fracture of the left leg, about its middle. I found both bones broken, the tibia obliquely, and the upper portion protruding about three inches on the inner side of the leg, through a wound five inches in length. The man was faint from loss of blood, but as far as I could gather from him, his general health was good, although he was decidedly of the scrofulous diathesis.

My colleague, Mr. Place, being too ill to attend, I had to decide on my own responsibility whether or not the leg could be saved. On the one hand was the little trouble of an easy operation, and the enormous trouble required to save the limb; but on the other, was the grievous injury to the patient. I determined, therefore, if possible, to save the leg, seeing no surgical reason why it should not be done, even in the hospital of a Union Work-house, notwithstanding the low estimation such establishments are held in by his Grace the Duke of Richmond. The protruding end of the tibia was so wedged in by the skin, that in order to return it to its place I found it necessary to remove about half an-inch of it, with the saw, and a small splintered portion with the cutting forceps, after which I was enabled to bring the edges of the wound together. I placed the man on his left side, applied a piece of lint dipped in blood to the wound, and put up the leg in a many-tailed bandage, with two splints, keeping the leg constantly wet with cold water. The further treatment was such as is usual in similar cases of severe injuries.

The man went on well, the leg remaining in a most excellent position, till the 21st of October, when I was suddenly called to him early in the morning in consequence of considerable hemorrhage from the wound. I found that the blood welled out at one corner of the wound, and that he had lost at least a pint. I ordered the constant application of cold water, and two table-spoonfuls of the following mixture every three hours:—Dilute sulphuric acid, one drachm and a half; tincture of opium, twenty drops; water, six ounces.

These measures had the desired effect of stopping the hemorrhage, but on several occasions during the next month I was much troubled by similar attacks, which, although not so severe, greatly impeded the progress of the case, and at last reduced the strength of my patient to an alarming degree.

After one or two of these attacks I was led to make particular enquiries of the man on the subject, and found that when he was in good health he always experienced the greatest difficulty in stopping the bleeding, from even the smallest cut, not being able to remove the dressings from it for ten days or a fortnight, without the recurrence of the bleeding, and that, on one occasion, he lost nearly a quart of

blood from a small cut in the wrist before it could be stopped.

With the exception of this bleeding, everything went on favourably till the 7th of January, when my patient was attacked with scarlet fever. At this time the wound in the leg was smaller than a fourpenny piece, and in every respect the man was progressing as well as I could wish. The fever was mild for the first three days, when it assumed a typhoid type, and the man became insensible, and remained so for ten days. The effect of the fever on the leg was most striking; the healed portion of the wound, nearly five inches in extent, turned quite black, and the cuticle peeled off; the bones, which were by this time firmly united, became disunited, and the leg one bag of pus. The fever was treated by the usual means, tonics and stimulants, and very large doses of opium, which I found it necessary to continue for some time after his recovery from it. The pus I evacuated from his leg by counter-openings, and dressed the wound with dilute nitric acid lotion and poultices. I was rewarded for all my trouble and anxiety, by my patient's gradual recovery from this frightful state of suffering and danger.

Towards the end of May I removed a loose portion of bone, which was an exfoliation from the sawn end of the tibia, and in a few days the wound in the leg was quite healed.

At this time I permitted my patient to get up, but in putting his leg to the ground, although it was firmly bandaged, two or three small vessels in different parts of the cicatrix gave way. The sore caused by one of these extravasations of blood under the new cuticle at the lower part of the wound, did not heal, and in a fortnight a portion of bone made its appearance, but it was very firmly attached to the surrounding parts. My patient had, up to this time, gone on improving in health and strength, and continued to do so: but in consequence of his still being unable to walk after so long a time, the Board of Guardians thought it right that a consultation should be held by the other medical officers of the Union, and a report of the man's present state be furnished by them, in order that the authorities of the parish to which he belonged might be satisfied that everything which was proper to expedite his recovery was being done. To this of course I could not have the least objection, and the meeting took place on Friday, July 13th. One of my colleagues gave as his opinion that the leg should be amputated, first, because the man was in a fit state of health for the operation; secondly, that he would never be able to walk; and lastly, that if he did, he would always have a wound in his leg. The other quite disagreed from these propositions, seeing no reason, from the state of the man, why he should not walk, and considering that the question of amputation could not be for one moment entertained. The result was, that they both signed a report that nothing more was at

present to be done for the man: I should have stated that at this time the bones were firmly united, and that the piece of bone, which I have before mentioned, was become quite loose; there was also a very shallow sinus at the upper part of the cicatrix.

July 16th. I removed the loose portion of bone, about two inches in length, which was an exfoliation from that part of the tibia; at which I cut off a small bit with the forceps. The wound quickly healed, and in ten days I permitted my patient to get up, the leg being previously well strapped and bandaged.

February 26th, 1845. The state of my patient is as follows:—His general health good; the small sinus at the upper portion of the cicatrix obliterated by the strapping and bandaging; the leg quite firm and strong, and much increased in size; but the knee having been kept some time in a bent position, it is not yet quite straight, but when it is so I am confident there will not be a difference of more than half an inch in the length of the two legs. He is able to walk on level ground with one stick.

I think a few observations on the treatment of this case will not be considered misplaced. The first question which might be raised is,—Should not the leg have been amputated at the time of the accident? I considered, from the state of the man's health, and from the cases of compound fracture which I have seen and attended, that there was no reason why the leg should not be saved. The sources of difficulty were—first, the hemorrhagic diathesis, the frequent occurrence of the bleeding in considerable quantity from a small portion of the wound, and which at last reduced the man so much as to place his life in imminent danger; secondly, the attack of scarlet fever, which was raging in the neighbourhood in its worst form, and which placed my patient in the greatest danger from its effects, both on the general health as well as on the leg.

In this stage, however, nothing was to be done but wait the result; and now the question arises,—Should his leg have been removed on the 13th of July, 1844, when my colleagues met in consultation, and one of them held that the man was in a fit state for the operation, &c.? I was most decidedly opposed to amputation, first, because I considered that after all the suffering of my patient, now that his leg was firm, and only a piece of bone to come away to enable him to get about, it would be an act of cruelty not to give him a chance of retaining his limb, which, although it might be nearly half an inch shorter, was by no means such a mass of deformity as to condemn it without a fair trial; secondly, had the limb been in such a state that the chance of its being any use was most improbable, still I should have objected to

amputation on account of the hemorrhagic diathesis, which in a wound, even in the inner side of the leg, only through the integument, nearly cut off the man's life. The result shows the advantage of giving the leg a trial, the man being able to get about now with one stick, and although it may be some months before his knee becomes quite straight, from his occupation giving him so few chances of using it, and his habits being very dissipated, and he is able entirely to lay the stick aside, still he can now follow his employment, and feels most thankful for the preservation of his limb, without which he would have been unable to do so.

TWO CASES OF TUBULAR EXPECTORATION FROM THE BRONCHI, IN THE ADULT.*

By JAMES REID, M.D.

The author, after noticing the rarity of this disease and that few cases of it are placed on record, describes two cases. In one, a married woman, æt. 28, after an attack of bronchitis followed by a chronic cough, expectorated several arborescent membranous substances, resembling casts of the minute bronchial tubes, for three days, the quantity gradually diminishing. She suffered from a recurrence of the attacks five or six times, at intervals varying from one to three weeks in extent, but each attack being preceded by a sense of suffocation. The patient lost flesh and strength, but recovered her health on removing to Devonshire in the summer. On her return to town in the winter she had a return of the complaint, which was again relieved by the expectoration of the arborescent tubular substance. There was no further relapse, and the patient died the succeeding winter of a disease unconnected with the chest. The second case was that of a barrister, æt. 44, who, after several attacks of cough, expectorated several portions of tubular substance, resembling plastic casts of the extreme bronchial tubes, accompanied with hemorrhage. The expectoration of this solid matter and blood recurred at intervals, but subsequently ceased, and at the end of nearly two years there had been no return of the disease. It is a curious coincidence, that the brother of this patient was afterwards affected with the same complaint. The case is related by Dr. Watson in his published Lectures. The bronchial concretions seemed, with few exceptions, to be hollow, and to contain both

* Medico-Chirurgical Transactions.

air and blood. In the first case there was great dyspnoea, but in the second the cough was never accompanied by a feeling of suffocation. The author, we think, rightly attributes the bleeding to the partial detachment of the plastic substance from the turgid mucous membrane. He considers the disease to be chronic inflammation of the mucous membrane of the bronchial tubes of a specific kind, and that the exudation does not depend on the intensity of the inflammation, but on some peculiar action of the parts producing it. It may attack both lungs, or be confined to one, as in the author's second case. He thinks the prognosis favourable, provided the malady is not complicated with phthisis or other serious disease. The higher the plastic formation takes place in the air-tubes, the more severe will be the symptoms. Dr. Reid does not recommend active treatment, but is disposed to rely more on the employment of ipecacuanha, squills, and other mild expectorants, conjoined with light diet. — *Med. Chir. Rev.*

A TABULAR VIEW OF THE SEAT OF TUBERCLE IN ONE HUNDRED AND EIGHTY CASES OF TUBERCLE OF THE LUNGS IN CHILDREN, WITH REMARKS ON PULMONARY PHTHISIS IN THE YOUNG SUBJECT.

By P. HENNIS GREEN, M.B.

In this paper the author proposes to indicate a few of the peculiarities which distinguish infantile consumption from the phthisis of adults. He gives a table of 180 cases of thoracic tubercle for the purpose of furnishing data for the history of pulmonary consumption in children. He remarks, "the main character which distinguishes the phthisis of children from that of adults is this, — in children, the tubercular deposit occupies a much larger surface of the lung, is more rapidly secreted, and is complicated with tubercular disease of other organs more frequently than in the adult. Hence children often sink under phthisis before the complaint has arrived at its third stage; while, on the other hand, the modifications produced by an extensive diffusion of tubercular matter often render the diagnosis of the disease obscure and difficult. In addition to this character, we have the peculiarities occasionally induced by excessive tuberculization of the bronchial phthisis, a form of disease altogether confined to the child."

The author notices an important modification which should guide the practitioner when he seeks to determine the existence of cavern in young children, viz., that under five years of age, the cavernous excavation is generally seated in the lower or middle lobes, and is almost always confined to one side of the chest. To show that the general effusion of tubercular matter forms a striking characteristic of phthisis in children, Dr. Green compares some of M. Louis's results with those deducible from his table.

"In 358 cases of phthisis in adults, M. Louis mentions the existence of tubercular matter in the brain or its membranes only once. In the bronchial glands, tubercles were found in about one-fifth of the cases; in the mesenteric glands, in one-fifth; in the liver, only twice; in the kidneys, five times in 170 cases; on the other hand, ulceration of the larynx existed in one-fourth, — ulceration of the bowels in five-sixths of the cases.

"The history of phthisis in children presents us with very different results. The brain was affected in one-ninth of the cases; the bronchial glands, in 100 out of 112; the mesenteric glands, in one-half; the liver in one-ninth; the kidneys in one-eighteenth; but ulceration of the larynx occurred only once; ulceration of the bowels, sixteen times in the 112 cases." 356.

The physical signs are rarely as well marked as in the adult, and the young child frequently dies before the practitioner is able to decide whether the lung be actually the seat of cavern or not. The cause of this is that, in children, "the tubercular matter is widely diffused, and has implicated many important viscera; in the brain, it may excite hydrocephalus or meningitis; under the serous membrane of the chest, pleurisy; in the abdomen, peritonitis; in the intestines, tubercular ulceration. These complications rarely undermine the resisting power of the little patient; diarrhoea sets in, and death ensues long before the period at which a fatal termination takes place in the adult."

Infants and children under five years of age hardly ever expectorate. They swallow everything that comes up into the mouth from the lungs. Hæmoptysis is an exceedingly rare symptom. The symptoms which constitute hectic fever in adults are seldom present together in any marked degree.

The bronchial glands were more or less affected in one hundred out of one hundred and twelve cases. In a few of these cases only were the glands sufficiently enlarged to produce symptoms through their mechanical effects, or by communication with

caverns in the lungs and the bronchi, and in such cases the term bronchial phthisis should be confined. Understood thus, this form of phthisis is peculiar to children, and attended with very characteristic symptoms; but it is not, as some writers assert, of frequent occurrence.

"The enlarged bronchial glands may act mechanically on the neighbouring organs contained in the chest, or they may perforate them. Hence a variety of symptoms, depending on the position or function of the injured part.

"The aorta and pulmonary artery, the vena cava, or the pulmonary veins, may be compressed by the tuberculated glands, and the flow of blood more or less impeded. M. Tonnellé has related a case in which the superior cava was completely obstructed, and I have seen one where the pulmonary artery was perfectly flattened between two enormous glands. From the compression of vessels may arise pulmonary apoplexy, fatal hemorrhage, effusions of serum, or symptoms closely resembling those of organic disease of the heart. The trachea, bronchial tubes, and lungs, may be compressed, and in such cases the symptoms will vary considerably, according to the seat and extent of the mechanical lesion. When the ganglions act on the lower portion of the trachea, MM. Rilliet and Barthez have noticed the existence of a loud, sonorous ronchus, which persists for a considerable length of time. In other cases, the pressure on the large bronchial tubes causes more or less feebleness on the respiratory murmur, which is remarkable in being intermittent.

"Pressure on the eighth pair of nerves or its branches is often attended by very peculiar modifications of the voice and cough. The former is hoarse or occasionally subdued, and even lost; or the hoarseness and loss of voice may alternate. The cough, also, is frequently hoarse, or occurs in fits which bear a close resemblance to those of whooping-cough, but are not followed by vomiting; or the fits may simulate accessions of asthma, with great oppression of breathing, anxiety, agitation, congestion of the head, and cold, viscid sweats.

"The enlarged or softened glands give rise to another order of symptoms, by perforation of the neighbouring parts. Thus fatal hemorrhage may arise from perforation of the pulmonary artery; pneumo-thorax from perforation of the lung; difficulty of deglutition and accessions of cough on swallowing from perforation of the œsophagus; but we should observe that these symptoms may equally depend on the presence of tubercular matter or of a cavern in the lungs." 365.

On the subject of diagnosis of this form of phthisis, the author remarks:

"Whenever a child presents several of the rational symptoms of consumption, without our being able to detect any physical signs of the presence of tubercles in the lungs or abdomen,

we have good reason to suspect that the bronchial glands are tuberculated. As long as the case continues to present this simple aspect we cannot go beyond suspicion: but it rarely happens that the glands acquire a considerable degree of development, without acting on the surrounding parts or tissues. As these become successively involved, we have a series of varying symptoms, which could not arise from any other source. The eyelids become œdematous, and in proportion to the degree of pressure on the vena cava, the œdema extends to the whole of the face, which is sometimes pale, sometimes tinged with venous injection. This œdema will appear and disappear several times during the course of the disease. The cough suddenly changes its character, and occurs in fits, like those of whooping-cough; the voice gets hoarse, and for days may be altogether lost; fits of asthma or of suffocation, as if the heart were diseased, occur. On examining the chest, we heard a loud sonorous ronchus, which persists for a length of time, and then disappears, or is replaced by other rôles of an anomalous character. When these symptoms are superadded to the rational signs of phthisis, we can have little hesitation in deciding that they arise from tubercular enlargement of the bronchial glands." 366.

We find nothing new on the subject of treatment. Dr. Green objects to emetics, lest irritation of the abdominal viscera hasten the deposit of tubercle in the abdomen, to which the patients are already too prone.

We much regret that we have been compelled to give so condensed an analysis of this excellent paper. Much, very much as Louis has done, it is evident that he has not exhausted the subject of phthisis, and the accurate information presented to us by Dr. Green will be received as a valuable addition to our history of the disease at the period of infancy. — *Ibid.*

PHRENOLOGY ILLUSTRATING INSANITY.*

In considering the forms of mental derangement, we feel it due to the science of phrenology to express our conviction that the four great classes of intellectual phenomena — the propensities, the sentiments, the perceptive and the reflective faculties, contended for by Spurzheim and his school, have a real existence; but in making this admission, we are by no means satisfied of the 35 subdivisions,

* From a review of Dr. Wigan on Duality of the Mind, in *Med. Chir. Rev.*, April, 1845.

and as to that which constitutes the peculiar part of this doctrine, the localization, namely, of those subdivisions in certain definite convolutions of the brain, we hold it not proved.

The adoption of so much of the phrenological system, and this is the amount of belief accorded to it by Dr. Wigan, will enable us to form clear conceptions respecting the various types of mental disturbance, and how it happens that one class of phenomena may remain intact, whilst another class is utterly deranged. The best writers upon this subject have marked these distinctions. Thus, to say nothing of monomania, in which there is illusion upon one particular subject only, we have that most prevailing species of disorder which has been well named "moral insanity," in which, as Esquirol remarks, although the passions and moral affections are perverted or destroyed, it may be difficult or impossible to trace any hallucination or disturbance of the perceptive and reflective faculties. The great frequency of this form of derangement, which is in fact much more prevalent than any other type, indicates the importance of considering how the tendency towards it may be controlled or prevented; there is, indeed, no question which more nearly concerns the well-being and happiness of society, nor one in which our profession, by inculcating right views, can more effectively benefit the community. A pamphlet having for its title, "On Man's Power over Himself to Prevent or Control Insanity," by the Rev. J. Barlow, Secretary of the Royal Institution, contains some excellent observations upon this subject; the principal position contended for being "that the difference between sanity and insanity consists in the degree of self-control exercised." Excluding those cases which depend upon physical causes, though even a large number of this class is pro-

20*

duced by vicious habits,* it is apparent that a considerable number of the cases met with in every asylum may be traced to a want of that rigid discipline of the mind, which is one of the most difficult, and yet one of the most important of the moral lessons, which man has to acquire on this side of the grave. Domestic griefs, reverses of fortune, jealousy, injured self-love, religious enthusiasm, what are these, the potential "moral causes" of insanity, but so many trials which come to all of us, and which, if not moderated by firmness, by humility, and above all, by the pervading conviction of the uncertain tenure of all earthly happiness, will overturn the throne of reason. Mr. Barlow well observes, "should my position, that the difference between sanity and insanity consists in the degree of self-control exercised, appear paradoxical to any one, let him note for a short time the thoughts that pass through his mind, and the feelings that agitate him; and he will find that, were they all expressed and indulged, they would be as wild, and perhaps as frightful in their consequences, as those of any madman. But the man of strong mind represses them, and seeks fresh impressions from without, if he finds that aid needful: the man of weak mind yields to them, and then he is insane."

The experience of the best observers confirms this view of the subject. How important are these remarks of Dr. Conolly: "seeing that any feeling in excess — the love of pleasure, or of ease, or of money, or of expense, or of applause; or that self-denial, or anger, or jealousy, or hope too sanguine, or sorrow too much indulged — may be-

* For example, out of 256 cases, dependent upon physical causes, as investigated by M. Esquirol at the Maison Royale de Charenton, 127, or more than half, were produced by causes resulting from defective moral control; masturbation, 23; libertinism, 24; use of mercury, 16; abuse of wine, 64.

come independent of the restraint of the comparing powers, and thus impair or disorder the understanding, we cannot but remark the importance of cherishing that governing and protecting action of the mind by careful cultivation and exercise." "Whoever will converse with lunatics, will soon be satisfied that a very small portion of them consists of persons whose talents have been regularly and judiciously cultivated."

A knowledge of the evils arising from this want of self-control is indispensable to the right treatment of insanity; for although it is indeed a difficult task to awaken those better feelings which have long slumbered, or, which is worse still, have never been acquired, the most unhopd-for success which has attended the non-restraint system, and its concomitant adjuncts, mental and bodily occupation, is all sufficient proof that intelligence and zeal, combined with benevolence and patience, will, in the end, triumphing over all obstacles, be rewarded with the happiest results.

ON CERTAIN DIFFERENCES IN THE COMPOSITION OF THE BLOOD IN THE MALE AND FEMALE.

MM. Becquerel and Rodier read a very elaborate memoir "on the Composition of the Blood in Health and in Disease," before the Royal Academy of Sciences, in the course of last November. As it must always be of the first importance to determine the normal condition of any of the fluids of the body, before we attempt to ascertain its morbid alterations, their remarks on the relative constitution of the blood in healthy adults of the two sexes may be deemed acceptable. The proportions given in the following table were determined by taking the average or medium figures obtained in a variety of experiments:—

| | Man. | Woman. |
|------------------------------------|--------|--------|
| Water | 799 | 791,1 |
| Globules | 141,1 | 127,2 |
| Albumen | 69,4 | 70,5 |
| Fibrin | 2,2 | 2,2 |
| Extractive matters and free salts. | 6,8 | 7,4 |
| Fatty matters | 1,6 | 1,620 |
| Seroline | 0,020 | 0,020 |
| Phosphorated fatty matter | 0,488 | 0,464 |
| Cholesterine | 0,088 | 0,090 |
| Soap | 0,004 | 0,046 |
| In 1000 parts of calcined blood | | |
| Chloride of sodium | 3,1 | 3,9 |
| Soluble salts | 2,5 | 2,9 |
| Phosphates | 0,334 | 0,354 |
| Iron | 0,565 | 0,541 |
| Density of the defibrinated blood | 1060,2 | 1057,5 |
| Density of the serum | 1028 | 1027,4 |

By comparing the two columns in this table, we find that certain very noticeable differences exist between the blood of the male and that of the female, in a state of health. The density of the defibrinated fluid is greater in the former, and consequently contains a larger quantity of soluble matters; the proportion of water too is decidedly less. The quantity of the red globules is considerably greater in the blood of the male than in that of the female; this is perhaps the most important, and indeed it is the fundamental, difference in the blood of the two sexes. In the female, the *minimum* number was 113, the *maximum* was 137, and the *medium* 127; (?) whereas in the case of the male, the *minimum* was 131, the *maximum* 151, and the *medium* 141.* The proportion of the Fibrin, and also that of the Albumen, was found to be very nearly the same in both sexes. The proportion of the iron present in the blood is always commensurate with that of the red globules.

MM. Becquerel and Rodier are of opinion that the function of *menstruation* exercises a marked influence on the proportion of the red globules in the blood of the female. In the girl before this function has properly commenced, the relative quantity is below the normal standard; when the secretion is fairly established, it (the quantity) rises up to 127 or even higher; and this state of

* This proportion is considerably higher than that (viz., 127) assumed by Andral and other hematological enquirers, as the standard of health; while the proportion of the fibrin in our table is lower than that (3) in theirs.

things continues until about the critical period of life, when menstruation ceases; then the proportion of the red globules falls considerably below this mark.

Pregnancy also has a very decided influence on the condition of the blood; the red globules, and the albumen become diminished, and the fibrin, phosphorated fatty matter, and the water slightly increased.—*Encyclographie des Sciences Médicales*, Dec. 1844.

PRACTICAL OBSERVATIONS ON THE VARIOUS FORMS OF DYSPEPSIA.

By ROBERT DICK, M.D.,

Author of a Treatise on the "Dérangements, Primary and Reflex, of the Organs of Digestion," "A Treatise on Diet," &c.

"I am of opinion that we cannot bestow too much pains on the consideration of AFFECTIONS of the STOMACH, as we find, that, next to the Pyrexia, they are the most frequent occurrences in practice." — CULLEN.

Having elsewhere treated, somewhat fully, the physiological questions connected with the subject of indigestion; my purpose, in the following papers, is to confine myself strictly to practical matters, and to handle these in the concise manner possible. I shall begin with a very brief notice of the principal causes of indigestion.

The well-being of the stomach, in common with that of one or two other organs of the body, is not a little affected (though the remark may seem somewhat novel), by certain of our moral and intellectual, or perhaps I ought rather to say, our irrational tastes and habits. We never do our lungs conscious and voluntary injustice. Except from necessity, we never expose them to noxious influences or exertions. Such, however, is not the case with our treatment of our stomachs. Daily, perhaps every one of us, from custom or from want of self-restraint, gives his digestive organs more to do than our wants require; not uncommonly, from gustatory predilections more or less sophisticated, we select articles of diet and modes of cooking, less wholesome than others which might be chosen. In the causes now named a majority of digestive derangements undoubtedly originate.

Food and drink, improper in kind or in quantity, form the chief and most frequent causes of indigestion. Undue bulk is the first and simplest of the improper qualities of diet. Its operation is to a considerable extent mechanical, and its effect is to overcome the natural resiliency of the muscular coat of the stomach. This organ, as well

as the gullet and intestines, is very contractile, inasmuch that the sides of each are when healthy in a state of natural collapse. Thus, could we see food descending the oesophagus, we should observe that tube contracted above and below the morsel; could we inspect the stomach, we should see it in its turn closely embracing the food it was receiving, and only expanding in strict accommodation to its contents, between which and its walls no vacancy was permitted. Now, though a considerable capacity of distension is natural to the stomach, yet this may be exceeded by meals constantly large: and then the result after a time will be that the contractility of the muscular coat will be gradually overcome in a greater or less degree, so that the stomach though empty will not resume its natural calibre, but remain more or less flaccid.

The natural hue of the internal surface of the stomach is pale pink; its appearance soft and velvet-like. When the organ is undistended by food, the mucous coat, from being more ample than the others, falls into considerable plicæ. The interior of the organ is constantly lubricated with mucus, a semi-opaque and sometimes slightly saltish fluid. The gastric juice is distinct from mucus. The former never flows except at the stimulus of food. The mucus is neutral; the gastric juice acid. The latter, differently from the former, is limpid. Rising through the mucous surface it appears in shining specks, which bursting from the orifices of the minute organs which secrete them, diffuse themselves over the whole surface of the stomach. As no sooner than food is swallowed, the alimentary mass is by a rallying movement of the stomach hurried from the fundus along the great curvature and back to the fundus along the lesser curvature; hence, the gastric juice, which flows all the while, is by this incessant tumbling of the contents of the stomach completely mixed up with the food.

From the description now given it will be easily understood how excessive meals operate injuriously. Over-distension of the stomach frequently repeated overcomes (as we have stated) the resiliency of the muscular coat. A species of muscular impotence ensues; the food lies comparatively motionless in the flaccid organ, and the important process by which the gastric juice is mixed intimately with the food, and brought in contact with the surfaces of the minutest fragments, is very imperfectly effected. Hence, just in proportion to the degree and permanence of over-distension of the sto-

mach, is digestion tardy and imperfect, and as food, not transmitted downward, in due time acts, in consequence of chemical changes, and accumulations, as a morbid stimulant, various untoward consequences arise.

Over distension and its ill effects may not be confined to the stomach, but excessive meals may extend their disastrous consequences over the whole alimentary canal. An alimentary mass larger than the system requires, and than can be duly digested, distends, in turn, the duodenum and small intestines (interfering, meantime, with the free excretion of the liver by the common duct), and, in consequence of the flaccid condition apt to be induced in the parts now named, impactions of the duodenum, and scybalous accumulations in the small intestines frequently occur. Another hurtful consequence of large, frequent, and stimulant meals, is the production of permanent hyperæmia of the mucous coat of the stomach, than which state nothing interferes more with the function of a secreting surface.

On the other hand, symptoms occasionally present themselves in practice that leave little doubt as to their being caused by a *contracted* state of the stomach and intestines. These occur in dyspeptics, who, harassed by the morbid sensibility of the stomach and bowels to almost every sort of food, have acquired a habit of taking aliment in only the smallest quantities and most concentrated forms, and into an almost total disuse of fluids. In these circumstances the stomach and bowels shrink amazingly, and any sudden increase in the volume of food is sure to cause in the first instance considerable suffering.

Every one has read the observations and the experiments of Dr. Beaumont on the stomach of St. Martin. The serious effects there detailed as following dietetic excesses are of a very curious and grave interest. At page 249, of Dr. Combe's edition of Dr. Beaumont's Experiments, we read the following:—"July 28th, nine o'clock, A.M.; stomach empty; not healthy; some erythema and aphthous patches on the mucous surface. St. Martin has been drinking ardent spirits pretty freely for eight or ten days past. August 1st, 8 o'clock, A.M. Examined stomach before eating anything; inner membrane morbid, considerable erythema, and some aphthous patches, on the exposed surface; secretions vitiated. Extracted about half an ounce of gastric juice, not pure and clear as in health; quite viscid. On the following day extracted one ounce of gastric fluids, consisting of unusual proportions of vitiated mucus, saliva, and some bile, tinged slightly with blood appearing to exude from the surface of the erythema, and aphthous patches which were tenderer and more irritable than usual." On other occasions the secretions from the mucous membrane seemed to be entirely suppressed; sometimes they became so acrid as to smart and excoriate the edges of the aperture of St. Martin's stomach. Occasion-

ally, during the use of improper aliment, the mucous membrane seemed abraded in parts, presenting the appearance of a blistered surface, with shreds of epidermis upon it. All these facts are alarmingly conclusive as to the effect of stimuli, imprudently and excessively used, in vitiating the secretions of the stomach, and otherwise disqualifying that organ for the due performance of its functions.

In St. Martin's case, the morbid causes above alluded to seemed sometimes to have *suspended* the secretions of the stomach. Thus Dr. Beaumont not unfrequently makes mention of an irritating dryness of the internal surface of the organ, which characterized its deranged conditions, and during which the delicate papillæ were exposed, unprotected by the mucous secretion, to alimentary contact.

It is obvious that as improper food almost necessarily sooner or later ensures stomachic derangement, so stomachic derangement, by a similar necessity, involves duodenal disorder; the vitiated chyme of the stomach being to the duodenum, what crude or irritating food is to the former. The connexion of the stomach with the duodenum may be stated as that of sympathy, but the relation of the duodenum to the stomach is something more. And the same remark applies to every inferior part of the digestive tube as regards parts superior to it. The duodenum has to contend not merely with its own deranged secretions, but with those also poured into it from the stomach, which last cause probably often primarily induces duodenal derangement, and materially aggravates it if already induced.

Functional disorder of the liver may long be the sole lesion in dyspepsia, but often the affection of the liver is something more than functional, and consists in a state of chronic inflammation. This term, the late Dr. Abercrombie very justly observes (page 365 of his Treatise on Diseases of the Stomach) is "applied to a morbid condition of the liver which remains after an acute attack, and a corresponding condition may come on gradually without any acute symptoms." Although the predetermined office of this organ is to secrete from venous blood, and although it is physiologically qualified for this singular function, yet it does not follow that the blood may not be so surcharged with imperfectly assimilated or other unusual ingredients, that even the liver, though expressly designed to rectify such states when existing in a moderate degree, may, in consequence of an extremely loaded and vitiated condition of the portal circulation, suffer such irritation as to lead to some chronic affection of the viscus. Cruveilhier, indeed, attributes hydatids of the liver to this cause; while M. Ribes supposes that a sub-inflamed state of the coats of the veins of the stomach and duodenum, caused by chronic derangements of these parts, and propagated by their veins to the liver, may be the source of certain sympathetic affections of this organ. Cruveilhier has seen

inflammation of the rectum extend by the hemorrhoidal veins to the liver.

At page 393 of his work which we have just quoted from above, Dr. Abercrombie observes: "It is probable that the bile may be increased in quantity, but it must, at the same time, be admitted that our prevailing notions on the subject are rather hypothetical than founded on facts. I am not aware of any test by which we can judge with precision of its redundancy, and I must confess my suspicion that the term bilious stools, is often applied in a very vague manner to evacuations which merely consist of thin feculent matter mixed with mucus." And he quotes in support of this opinion from a paper of Mr. Tytler, in the *Calcutta Transactions*.

Without entering on the question whether, and with what frequency, feculent are mistaken for bilious stools, and seeing that Dr. Abercrombie admits it to be probable that the bile may be increased in quantity, it would, I think, have been desirable that this eminent physician should have stated the grounds of his doubt as to the easy practicability of arriving at comparative certainty on this point.

In reference to this matter, we have Sir B. Brodie's, and Tiedemann and Gmelin's experiments. In the experiments of the two last, the excrements, after ligation of the biliary duct, were, I believe, in all cases white. We know, also, that many of the mechanical causes which produce jaundice, simultaneously induce clayish-coloured stools. Dr. A. observes, in the same page from which the preceding extracts are made, that the bile, when mixed with the usual contents of the intestinal canal, imparts to them a bright yellow. It will give, doubtless, a corresponding tinge to the feces; and the usual depth of this tinge, in healthy evacuations, being determined by an infinity of observations, it follows that if a very deep yellow, or a dark brown hue, be presented in the feces, not to be accounted for by anything remarkable in the recent ingesta, medicinal or dietetic; if, in addition, we find a more active, peristaltic movement of the intestines (another usual proof of the abundance of bile, as torpor of these is of its deficiency) giving rise to diarrhoea; we surely have sufficient evidence on which to ground scientific treatment, that the liver is secreting with unusual profuseness.

Dr. Abercrombie, at page 385 of the work just quoted from, reprehends "the prevailing doctrine, or rather the prevailing phraseology, by which numerous symptoms are ascribed to disease of the liver on very vague and inadequate grounds;" and he regrets "the prevalence of this doctrine, and the indiscriminate use of mercury which has arisen from it." This jealousy of mercury Dr. William Thomson, formerly of Edinburgh, now of Glasgow, largely shares, as we learn from his work on the liver. I would merely here observe, that of all the abdominal organs the liver is the most frequently, easily, seriously deranged; the one which most readily takes on the successive

phases of functional, chronic, structural disease. While this certainly is no excuse for the careless or rash practitioner, who fancies he sees hepatic disease in every stomachic or intestinal affection, yet Dr. Abercrombie's language may be apt to divert the attention of younger practitioners from an organ the chronic derangements of which he himself, in our opinion much too unqualifiedly, describes as being, "in a large proportion of them, beyond the reach of any human means."

As to the use of mercury in disorders of the liver, we would here merely remark, that in many of these mercury is unquestionably the most efficient agent; and that objections founded on its abuse have no weight against its judicious use.

The pancreas.—Though we are, in a great measure, ignorant of the precise uses of the pancreas, yet there can be little doubt that it performs a part in the process of digestion. Dr. Baillie mentions a case of abscess of this organ, in which the symptoms before death consisted in wandering abdominal pains, in spasmodic affection of the abdominal muscles, in squeamishness, in stomachic distension. Disease of the pancreas may simulate, or rather be mistaken for, affections of the stomach, or of the left lobe and convex surface of the liver. It frequently causes epigastric pain and sickness, and sometimes jaundice, when structural disease, extending along its duct, involves the ductus choledochus, narrowing or obstructing that common conduit. Its enlarged bulk may also be detected through the stomach, and be mistaken for structural disease of that viscus; or else pressing on the ductus communis, or the duodenum, may cause obstruction of the former, impaction of the latter.

Spleen.—Of the function of the spleen we are even more ignorant than of that of the pancreas. But, doubtless, disorder of that function, in one way or another, affects digestion. Its proximity to the stomach renders it almost impossible that the spleen should be seriously disordered, and the stomach remain uninfluenced. Indeed, it is often through the stomach alone that affections of the spleen manifest themselves. Accordingly, we have cases in which obscure and generally mild dyspeptic symptoms alone announced the splenic disease which caused them, and which post-mortem inspection unveiled. This organ is one of the most insensible organs of the body, so that the gravest and most extensive disorganization may go on in it without a sensation of pain being experienced. Even pressure on an inflamed spleen does not develop pain. Hepatic obstructions, by interrupting the portal circulation, may cause venous tumefaction of the spleen, in common with that of the stomach and pancreas. To this cause are probably owing those alternations of fulness and pain between the liver and this organ which Dr. Philip notices.

I have stated that errors either in the quantity or the quality of diet are by far the most frequent and efficient causes of dyspeptic derange-

ments; yet it is scarcely necessary to observe that indigestion may owe its origin to almost any of the causes which produce disease in other organs of the body. There may, undoubtedly, be an original or acquired disposition to derangement of one or more of the principal organs of digestion, as there so frequently is to pulmonary, renal, or other disease. Most persons have what may be called one weak point in their system, one organ, or set of organs, more apt than others to fall into irregularity of action: accordingly, with some persons, the stomach, the liver, or the colon, or all these organs, costs them trouble and attention; with others, cold excites irritation, not in the pulmonary, but the gastric mucous membrane; others, on exposure to raw and damp air, fail not to suffer from catarrh, complicated with marked biliary derangement; others, on any occasion of unusual thought or anxiety, are sure to have what, in familiar, but sufficiently intelligible language, is called a fit of indigestion. Hence, then, the disease in question may arise from changes of temperature, from fatigue, from mental labour, from moral excitement, besides a thousand other causes capable, or not capable, of being appreciated.

ON PUERPERAL FEVER.

By J. Symonds, Esq., Surgeon, Oxford.

As my object, in drawing up this paper, has been, rather to record my own experience on the subject, discussed therein, than to detail the opinions of others, I have not noticed the valuable treatises on this disease which from time to time have been published, either in systematic treatises, or in monographs written for the express purpose of elucidating the pathology and treatment of the malady in question.

There have been three forms of febrile disorder occurring in the febrile state, which have particularly fallen under my notice; these, for the sake of avoiding needless periphrasis, and for reasons which I shall presently assign, I shall designate respectively as the phlegmonous, the erysipelatous, and the remittent puerperal fever. The first, which I have termed the phlegmonous, — and I use the word phlegmonous as expressive of inflammation, which is not only acute, but is also not superficial, and which pervades the substance of the inflamed organ or structure — consists of acute enteric inflammation of the uterus or of the peritoneum, and which, in the majority of cases that have come under my observation, have been more frequently met with in conjunction than separately. Certainly, the uterus has been almost always implicated, and for the most part primarily. The attack generally comes on some time within the fifth or sixth day

from the patient's delivery, more commonly on the third or fourth day than at any other period. It is usually ushered in with rigors, more or less severe, though the urgency of the seizure is not always in proportion to the violence of the rigor. In some cases the patient has scarcely been sensible of anything like coldness or shivering, even where the malady has proved of a most formidable and threatening aspect, and has been with difficulty got under. On the other hand, when the rigor has been severe and prolonged, the disease has been subdued with less difficulty than might have been anticipated from the manner of its commencement. Still, a sharp rigor supervening in the lying-in condition, is not an indication to be trifled with, and is too often portentous of coming evil. To coldness succeeds a hot skin, the tongue becomes coated with a white fur, the pulse is rapid, sometimes full and bounding, but more commonly hard and compressed, and ranging in point of frequency from 110 to 130 beats in the minute. The lochial discharge becomes pale and scanty, and the mammary function is either wholly suspended, or very sparingly performed. The patient complains of severe and almost agonizing pain, attended with exquisite pain on pressure of the hypogastric region, shooting to the back, and upwards to the umbilical and iliac regions, and this more especially when the inflammation extends beyond the peritoneal covering of the uterus.

The treatment of this malady must, it is obvious, be strictly antiphlogistic, and no time should be lost in carrying into effect the measures necessary for the removal of the disease. On the promptitude and decision with which such measures are put in force, will be the probability of a successful result. Bleeding, both general and local, must be practised, and that with a freedom and frequency of repetition proportioned to the urgency of the symptoms and the strength of the patient. After the application of leeches, I have found bran, enclosed in a flannel bag, and carefully wrung out in hot water, the most convenient method of fomentation, and the poultice thus prepared should be large enough to cover the lower and indeed larger part of the abdomen. This should be renewed from time to time, and steadily persevered in.

In order to induce free catharsis, as well as nausea and vomiting, I have usually administered, in the form of pills, calomel and extract of colocynth, and in mixture or draught, a solution of emetic tartar, in the dose of a fourth to half a grain of that salt. The pills should be repeated with each dose of the mixture, till they have fairly succeeded in emptying the

intestinal tube. The emetic tartar will rarely occasion vomiting after the second dose. It must be remembered, however, that both calomel and emetic tartar are, in these cases, edged tools, and should not be persevered in long after their effect has been fully established.

It will be well to bear in mind, that a not uncommon sequel of this and other forms of puerperal fever is an inflammatory irritation of the mucous coat of the intestines, giving rise to obstinate, and sometimes almost intractable diarrhoea. After the supervention of sickness and purging, I should prefer the milder diaphoretic and relaxant remedies, such as grey powder, with ipecacuanha, in pills, and the citrate and nitrate of potash, dissolved in almond emulsion, to which may, with advantage, be added a drop of tincture of hydrocyanic acid, or a proportionate quantity of laurel-water to each dose. If after the pulse shall have been reduced, both as to time and frequency, and the febrile symptoms generally mitigated, local pains and tenderness should still continue, benefit will seldom fail to be derived from the application of a blister of tolerable size to the hypogastric and umbilical regions. Blisters in these, as well as in other inflammations, are not, in my opinion, to be regarded merely as counter-irritant remedies, but as instrumental, by the discharge consequent on their application, in unloading the capillary circulation of the inflamed part.

I have more than once tried Dr. Armstrong's plan of giving large doses of opium subsequent to bleeding in these cases. I was at first rather sanguine of its being attended with beneficial results. I had, on, reading Dr. Armatrong's paper on the subject, pleased myself with the hope that the opium would check reaction, as well as allay that high nervous excitement which I have often found a most troublesome concomitant of puerperal disorder. I cannot say that I should be disposed to repeat the experiment, though I have made it with impunity, as to the ultimate issue. I must confess that the opium appeared to me rather to mask the symptoms than to assist in subduing the disease, and I am not certain that, instead of superseding the necessity of a repetition of the bleeding, the necessity was not rendered more imperative by the exhibition of the opiates.

The second form of febrile disorder in the lying-in state, which I have termed the erysipelatous, may be considered as puerperal fever, properly so called, as having more of an idiopathic character than the one to which I have already adverted, and which, in strict propriety, should rather be ranked amongst the *phlegmasie* than the *febris* of Cullen.

It has been variously disseminated as peritoneal fever, malignant and epidemic puerperal fever. There can be no doubt that it is often both epidemic and contagious, and it is too probable that the accoucheur has not infrequently been the medium of communicating the contagion from one patient to another,

more especially if he has not taken the precaution of changing his clothes, or has attended a necroscopical examination of a person who has died a victim to this too often fatal malady.

In addition to the symptoms already recorded of what I have termed phlegmonous puerperal fever, the leading pathognomonic symptom of the epidemic or erysipelatous puerperal fever is a frightful rapidity of the pulse, which is usually softer, less tense, and not so characteristic of acute inflammatory action as in the phlegmonous puerperal fever. The pulse seldom beats less than 130 in a minute, and often rises to 160, and even more. A tympanitic distention of the abdomen is a common, and indeed almost invariable, concomitant of the disease.

The peritoneal inflammation which attends epidemic puerperal fever, is, I have no doubt, of an *erysipelatous* description, and in the inflammation of the uterus, in all probability, *phlebotic*. This view of the nature of the local inflammation, corresponding to the symptoms and phenomena of the disease, has been corroborated by necroscopical examinations, and by the circumstance of persons who have washed the linen of patients suffering under this form of puerperal fever having become the subjects of erysipelas in its worst and most malignant aspect. Erysipelas, too, has prevailed at the same time that puerperal fever has been epidemic, so that the same constitution of the atmosphere would seem to predispose to one disease as well as the other, and hence a fair presumption arises that the two maladies are of the same nature.

In more than one instance of this disease which occurred in my practice, I have noticed a fallacious appearance of amendment, and a remission of the symptoms, which led me to indulge a hope of recovery which the event did not warrant. In these cases the local discharge and the milk from the breasts have flowed more freely, and there has been less local pain and general fever. This improved aspect of things has seldom been of more than a few hours' duration, and the circumstances of the case have proceeded in *pejus ruere*.

Though delirium and mental wandering frequently occur in the course of the disease, yet the patient, in the intervals between these fits of incoherency, maintains a calm and collected demeanour, and this till a very short time previous to the fatal issue.

I wish that I had something more satisfactory to communicate as to the treatment of this formidable malady, which in my practice, I must acknowledge, has been too generally fatal, and yet this unhappy result has not obtained, from the want of prompt and well-considered application of remedial agents. Bleeding, both general and local, blistering, emetics, calomel and opium, the exhibition of turpentine, have been tried in turn, and too frequently without avail.

If bleeding be practised, it should be had recourse to very quickly after the commencement

of the seizure, or it will too frequently hurry rather than avert the fatal issue. In one case, the patient, of a very delicate and apparently fragile constitution, after two bleedings from the arm, and a free evacuation from the bowels, which was obtained with difficulty, was, in all probability, rescued from the grasp of the destroyer by the timely exhibition of quinine, in small doses, very frequently repeated. If I recollect aright, a grain was given hourly. It was administered in combination with opium, which the supervision of troublesome diarrhoea rendered almost imperative, and also with camphor, though this latter drug was subsequently omitted, on account of the profuse diaphoresis which it appeared to occasion. The local pain and tenderness were evidently relieved by the application of a large blister to the abdomen, which, after the cuticle had been removed, was dressed with mercurial ointment. This application served to keep up the discharge, though it did not affect the mouth.

The patient's strength, which appeared every now and then ready to succumb under the pressure of the malady, was sustained by the liberal administration of wine and brandy, with arrow-root, and similar articles of nutriment. At one time the supervention of nausea and vomiting threatened seriously to embarrass the treatment, but this untoward symptom was opportunely relieved by an occasional dose of creosote. From the time of the seizure, two days after delivery, till about the twelfth day, the patient remained in a state of imminent danger, though the appearances became now and then more favourable. The pulse, from the third to the twelfth day, was seldom less than 130, and sometimes mounted to 150 beats in the minute. Her convalescence was somewhat tedious, but she was at length restored to her usual measure of health and strength.

During her recovery an oedematous swelling of the lower extremities came on, which yielded to diuretics; and a chronic enlargement of the uterus remained for several weeks subsequent to delivery, but which also gradually subsided. The lady has since given birth to another, her fourth child, after an unusually quick and easy labour, and recovered without a single unfavourable symptom or untoward occurrence.

Three or four cases of the same kind, similarly treated, and with a favourable result, have been communicated to me by two physicians of extensive practice and well-deserved reputation.

Should a case of the same description occur again in my practice, I should be strongly inclined to try the combined effects of bleeding, blistering, and quinine, given in small and quickly repeated doses.

The third form of puerperal fever which has come under my notice I have designated as the remittent, because it has always, in my practice, been attended with a distinct remission and exacerbation once in twenty-four hours. I think it right to mention, that fevers of a remit-

tent type, both in children and in patients, at an adult and more advanced period of life, are of rather frequent occurrence in this city and its vicinity. This I attribute to the circumstance of several streams passing through the lower tracts, near to the lower suburbs of the city, and the adjacent meadows being in consequence, especially in a rainy season, frequently covered with water. I know no malady of more frequent occurrence in these localities than the remittent gastric fever of children. Fever of a remittent form may, I think, fairly be accounted as an endemic in Oxford and its neighbourhood.

The febrile disorder which I have designated as puerperal remittent has appeared to me intermediate, between what I have termed the phlegmonous, on the one hand, and the erysipelatos lying-in fever on the other. The symptoms of inflammation are not so acute as in the former, nor have they that tendency to rapid and sudden collapse and typhoid degeneration which has been observable in the latter.

The remittent puerperal fever commences usually with rigor, which is followed by the usual symptoms of fever. There is a certain degree of pain and tenderness, on pressure, in the hypogastric or abdominal regions, but not so marked and severe as in the phlegmonous and erysipelatos forms. The lochial discharge is generally diminished in quantity and paler in colour than in a healthy puerperal condition, but is seldom entirely suppressed. The pulse is quick, hard, and contracted in its diameter, and generally ranges from 100 to 120 in a minute. The tongue is covered with a white fur, the skin is hot. There is often acute pain of the head, which I have suspected to be of meningeal origin, though I have rarely met with instances of severe delirium. This pain of the head has generally occurred where the mammary secretion has been suspended.

To the best of my recollection, every instance of this kind of febrile malady, occurring in the puerperal condition, has done well, though they have caused me at times considerable anxiety, and the duration of the febrile disturbance has been generally somewhat more protracted than in what I have called the phlegmonous puerperal fever.

The *modus medendi* which I have adopted in this disease has been strictly, though moderately, antiphlogistic. It seldom requires copious depletion, and I do not remember more than one case in which I have had to bleed a second time, though I have now and then found it necessary, even after venesection, to apply leeches to the temples, and a blister to the nape of the neck, in order to relieve the pain of the head. After the exhibition of an ipecacuanha emetic, and a brisk mercurial purgative, I have usually trusted to the milder forms of diaphoretic and relaxant remedies, such as grey powder and ipecacuanha in pills, and washed down with a solution of the citrate and nitrate of potash, combined with hydrocyanic acid. Attention to the state of the bowels should be kept

up, for I have generally found them inclined to a torpid rather than a relaxed condition. Under such treatment the patient has, to the best of my recollection; uniformly done well. When the febrile symptoms have been fairly subdued, quinine may be given with good effect. This, or medicines of a similar kind, should be continued till the strength of the patient shall have been thoroughly recruited.

PRACTICAL REMARKS ON THE USE OF CARBONATE OF LEAD, IN THE FORM OF WHITE PAINT, IN THE TREATMENT OF BURNS AND SCALDS:

By S. D. GROSS, M.D.,
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Burns and scalds are of daily occurrence. To manage them properly must, therefore, be an object of primary importance; and yet there are no injuries which are approached by the practitioner with such feelings of doubt and apprehension. The reason of this is obvious. The whole subject has been invested from time immemorial with a sort of mystery; every writer has his peculiar classification; and the treatment, even at the present day, is confessedly of the most opposite and diversified character. In fact, there is scarcely an article of the *materia medica* that has not had its advocates in some stage or other of these lesions.

It is not my intention, in this paper, to speak of the various forms of burns, the phenomena by which they are characterized, or the effects to which they may give rise, when severe, neglected, or injudiciously managed. This has been so often done that anything that might be said would, of necessity, be a mere repetition of what may be found in our surgical works. My object is to call attention to a mode of treatment, of the value of which few physicians seem to be aware. I allude to the use of the carbonate of lead, in the form of white paint. It is not unknown to me that this article has occasionally been resorted to by the common people as an application to burns and scalds; but no writer, so far as my information extends, has treated of it *ex professo*.

VOL. III.—21

My attention was first directed to the subject about two years ago, by Dr. Somerby, an eminent dentist of this city, who, in manufacturing porcelain teeth, and in consequence often burning his hands and fingers, always finds prompt relief from the employment of white lead. Since that time I have constantly used this substance in my practice, and now look upon it as the most valuable therapeutic agent of the kind we possess.

One of the most important indications to be fulfilled in the treatment of this class of injuries is, to prevent the contact of the atmosphere. If this can be accomplished, the pain soon subsides, and, unless the burn be very extensive, or the patient unusually irritable, or debilitated by previous disease, recovery is almost certain. This object has been attempted to be attained by various means, of which the most efficient are carded cotton and the liniment of lime-water, or Carron-oil, as it is sometimes called from its having been so much employed at the iron-works of that name in Scotland. Lately, Mr. Rhind, of England, has recommended for the same purpose a solution of gum arabic, repeated coats of which are applied, so as to form a complete covering to the affected surface. In several cases in which he tried this method, prompt relief seems to have followed.

It is difficult to determine whether the white lead produces its beneficial effects simply by preventing the injurious impression of the atmosphere, or whether it also at the same time obtunds the nervous sensibility. The probability is that it acts in both ways. However this may be, I know of no application which so speedily allays pain, prevents the formation of vesicles, and puts a stop to inflammation. I have seen patients, literally agonized with suffering, become perfectly composed, and even cheerful, within a few minutes after the burned surface was thoroughly painted. In fact, it generally acts like a charm.

The best mode of applying the white lead is by means of a large camel's hair

pencil, or, what answers equally well, and can always be readily obtained, a soft muslin or linen mop. With this the affected surface is covered with a layer sufficiently thick to conceal it from view. If vesicles exist, their contents must be evacuated with a fine needle, and the part dried with a soft sponge, or carded cotton, otherwise the lead will not adhere. The dressing is completed by covering the painted surface with a piece of old muslin or linen, and confining it with a moderately light roller. I have on several occasions used carded cotton instead of muslin, but have usually found it objectionable, on account of its tendency to imbibe the secretions and keep up too much heat. For the same reason, when the burn is deep, and the discharge likely to be considerable, the thin compress here recommended should be perforated with numerous holes, so as to afford a proper drain. The number of dressings, or the frequency with which they are repeated, must depend upon circumstances. In superficial burns, one application will often be sufficient: if the lesion, however, involve the deeper layers of the skin, or extend entirely through its substance, it should be renewed at least once in the twenty-four hours. Whenever the dressings become saturated with secretions, the part is rendered painful, and the system irritable. In mild cases, the paint and epidermis form a sort of dry incrustation, which usually drops off in three or four days, leaving the surface beneath entirely well, or of a slightly excoriated appearance.

The lead of the shops is very stiff, and consequently unfit for use. Before it is laid on, it should be well mixed with linseed oil, in the proportion of about one ounce of the former to a drachm of the latter, or until it is of the consistence of thick cream. When the linseed oil is not at hand, olive oil may be advantageously used as a substitute.

It is not merely to the milder forms of burns and scalds that this re-

medy is applicable; it may be beneficially employed whatever be the extent or depth of the injury. When the skin is converted into a cinder or an eschar, it matters not what we use; the contact of the atmosphere can do no harm, and the great indication, as far as the local treatment is concerned, is to promote the detachment of the slough, and establish granulation. After this process has fairly commenced, or even before, the paint again constitutes, according to my experience, the most soothing and eligible application that I know. In the case of a negro woman, 16 years of age, who had a sloughing burn, extending, on the one hand, from the umbilicus to the lower part of the face, and, on the other, as far out on each side as on a line with the axilla, the only application I used was the white lead paint, applied, at first every other day, and afterwards, as the discharges became more abundant, once a day, until the cicatrization was completed. The period occupied by this process was upwards of five weeks; and, although the quantity of diluted lead consumed was upwards of a quart, no unpleasant effects whatever ensued from its application. It is particularly important in all cases of this kind that the dressings be frequently renewed, that is, at least once in the twenty-four hours, otherwise they will become stiff, offensive, and a source of more or less suffering. When the sore is very large, it is best to expose only a part of it at a time.

The external use of white lead is regarded by many practitioners as extremely dangerous, on account of the risk of absorption; I have never, however, in a solitary instance witnessed any bad effects from it. In some of the cases in which I have either employed it myself or seen it used by others, the injury occupied a large extent of surface and penetrated nearly, —in some —the whole —convinced, is greatly imaginary.

Granting, however, that the application is not devoid of danger, all unpleasant effects may be obviated by the occasional exhibition of a dose of sulphate of magnesia, which, while it keeps the bowels in a soluble condition, operates as a counter-poison, by forming the inert sulphate of lead. With the same view, free use might be made of the sulphate of alumen.

From the great efficacy of white lead, prepared and applied in the manner above mentioned, a certain quantity of this article ought constantly to be kept on hand on board our steamboats, in breweries, soap-factories, and similar establishments, where burns and scalds are of such frequent occurrence. It might thus always be employed with the least possible delay, a matter of no little moment both as respects the immediate comfort of the patient, and, in many cases also, his ultimate recovery.

Finally, although not strictly relevant, it may be mentioned here that the white lead paint promises to be of great utility in the treatment of irritable blisters, in superficial ulcerations, in excoriations of the skin, and in chilblain, or frost-bite. In the latter affection, I have, in several instances, found it to afford the most prompt relief after all the ordinary remedies had failed; it speedily allays the unpleasant itching, or tingling pain, so characteristic of the disease, removes capillary congestion, and imparts new tone to the enfeebled and relaxed tissues. In one case, in which obstinate ulceration had existed for a number of years, a complete and permanent cure was effected by this remedy in less than ten days. As an application to vesicated surfaces, rendered irritable by the violent action of the fly-ointment, or by any other local or constitutional cause, there is no article which, in my opinion, is equal to it. The manner of applying it in these cases is the same as in burns and

TREATMENT OF CHRONIC MAMMARY ABSCESS BY THE BREAST-PUMP AND SYRINGE.*

Dr. Alexander Wood proposes to treat that form of mammary abscess which gives rise to deep-seated sinuses, and sometimes continues for many months with little variation in its appearance, in the following manner: "As soon as the indistinct fluctuation, or rather the boggy feeling, by which the formation of matter in these abscesses can be detected, is distinctly ascertained, let a small bistoury or abscess lancet (the common lancet will sometimes not penetrate deep enough), be carried down until the matter begins to escape; after all that can be squeezed out by pressure is removed, let a breast-pump be applied over the orifice, and the rest of the matter drawn out. The sinus is then to be injected with some astringent solution by means of a small syringe." "A pledget of lint dipped in the lotion is then to be applied outside and covered with oiled silk; over this a compress may be placed, and firm pressure maintained on it by means of adhesive plaster. In some cases the walls of the abscess will unite at once, and all that remains to be done is to trust to time for the removal of the surrounding induration, or to attempt to discuss it by frictions, &c. &c. Dr. Wood adduces three cases of chronic abscess in which he adopted this mode of treatment with complete and speed success. We can imagine that this plan would be found serviceable in various forms of abscess. It is always observed that where the pus lies deep, and is but imperfectly evacuated, the disease proves intractable; the great indication for cure appears to be, that all irritating fluid should be removed from the depths of the cavities, and that the internal vascular surfaces should be brought closely into apposition with each other. — *Northern Journal of Medicine*

REMOVAL OF A COIN FROM THE LARYNX BY INVERSION OF THE BODY.†

By Dr. JAMES DUNCAN.

A man, while amusing himself tossing up a shilling and catching it in his mouth, felt it pass into the larynx. The accident was followed by a violent fit of coughing attended with great difficulty of breathing. The difficulty of breathing continued some time, and then gradually passed

* *Med. Gazette.*

† *Ibid.*

o such an extent, that he was able to walk some distance to procure medical advice. He was seen by Dr. Paterson in about half an hour afterwards. The dyspnœa was then inconsiderable; but occasionally, on change of position, or on making a forcible inspiration, a violent paroxysm supervened. When Dr. Duncan saw him, about an hour after the occurrence of the accident, the respiration was perfectly easy, but the voice was considerably affected, being reduced almost to a whisper. He stated, however, that when he inspired forcibly he felt considerable inconvenience, and that there was then the sensation of the presence of a valvular body in the trachea, impeding the passage of the air. The air passages were examined carefully, but not the slightest unusual sound was heard. When the larynx was compressed externally, the patient stated that he was perfectly satisfied that the coin was lodged there; and the part which he pointed out corresponded with the cricoid cartilage. Before having recourse to an operation, it was determined to attempt to dislodge the foreign substance by inversion of the body. The man was placed with his shoulders against the raised end of a pretty high sofa, and then, being seized by three of the most powerful of those present by the loins and thighs, he was rapidly inverted, so as to bring the head into the dependent position, and, after a shake or two, the larynx at the same time being moved rapidly from side to side, the shilling passed into the mouth, and fell upon the floor. Not the slightest cough nor dyspnœa was produced, and the patient immediately started up delighted with the result. He had not the slightest subsequent bad symptom. — *Abridged from the Northern Journal of Medicine.*

BULLETIN.

Philadelphia, July, 1845.

Dictionary of Practical Medicine.

We would suggest to the publishers of the American edition of this work the advantage, to themselves, of their having a correct list of the Medical Journals to which they propose sending it. No man feels particularly flattered by being addressed as editor of a journal, published in another city, and of quite a different nature from that which he

edits. We would recommend, also, that the successive numbers of this or of any other work published in a similar manner, should be sent to the Medical Journals for which they are intended, with the same regularity as to subscribers. Publishers, in transmitting their books to editors, look to their own advantage — not to the gratification of these latter; and it is in this view of the subject that we make the above remarks.

We have not received Nos. V. and VI. of the Dictionary, the eighth number of which has reached us. When we have the numbers in an unbroken series, as far as they are published, before us, we shall be better able to speak of the scope and value of the work, and indicate the articles more especially worthy of notice.

Journals.

The *Buffalo Medical Journal*, No. I., has reached us. Its editor, Dr. Austin Flint, promises a devotion to his task and aid from his brethren of Buffalo and elsewhere in the region of the Lakes. With such appliances, the desired success will, we hope, crown his efforts.

The *St. Louis Medical and Surgical Journal* comes to us enlarged, and with the name of W. M. McPheters, M.D., in addition to that of Dr. Linton, its former editor. Under the direction of these gentlemen, the St. Louis journal can hardly fail to extend the circle of its friends and supporters — *videlicet*, its writing contributors and subscribers.

In the present number there is a paper of some length, by Dr. Fourgeaud, on the Mortality of St. Louis, which, both on account of the importance of the subject intrinsically, and its relations to the medical statistics of other cities, as indicated by Dr. F., merits a more extended notice than it is in our power just now to give.

The *Western Lancet*, for June, has been received, but the numbers for April and May have not reached us.

Medical Graduates and Medical Students.

The number of gentlemen graduated at the spring commencement of this year, at the Georgia Medical College, is 33; in the Medical College of the State of South Carolina, 74; in the Transylvania University, 38; in the Medical College of Ohio, 47; and in the Massachusetts Medical College of Harvard University, 19.

The number of Medical Students in attendance during the session of 1844-5, was, at the Medical College of Ohio, 210; and at the Medical College of the State of South Carolina, 196.

The above is some addition to the statistics furnished at pp. 134-5 in the April number of the Bulletin. We shall willingly give insertion to farther official returns of this nature whenever they reach us.

Fiscal Report of the Pennsylvania Hospital for the Year ending April 26th, 1845.

We glean the following particulars from the "State of the Accounts of the Pennsylvania Hospital," recently printed for circulation among the contributors.

Salaries and Wages.—Stewart and Matron, \$300—Clerk and Librarian, \$700—Apothecary, \$350—Attendant on West's Painting, \$9—Watchman, \$144—Seamstress, \$73 50—Attendants on the Sick, \$2,266 16—Cooks, \$213 50—Housemaids, \$225—Washerwoman, \$565 12 5,346 28

Medical Library, Stationery, &c.—For Medical Books and Binding, \$338 89—Stationery and Printing, \$124 97—Payment to City Library, \$4 467 86

Incidentals.—For Postage, \$1 13—Watch and Newsmen, \$1 75—Discount, \$6 19—Board Refunded, \$32 86—Funeral Expenses, \$43 50—Jobs and Laborers, \$17 35 102 78

\$5,916 92

To the Hospital for the Insane (out of town), the following items are charged:

21

Salaries and Wages.—Physician of the Hospital for the Insane, \$2,500—Assistant Physician, do. \$499 99—Steward, do. \$700—Matron, do. \$300—Attendants on Patients, \$4,320 80—Watchman and Woman, \$218 50—Cooks and Dairy-maid, \$348 97—Housemaids and Attendants on Dining Rooms, \$426 75—Washerwoman, \$482 29—Fireman, \$156—Baker, \$182—Coachman, \$156—Gatekeeper, \$120—Mechanic, \$242—Jobs, Laborers and House Cleaning, \$257 75 6911 06

Incidentals.—For Printing and Stationery, \$195 38—Postage, \$13 48—Books and Newspapers, \$124 41—Articles for the Amusement and Occupation of Patients, \$272 14—Travelling Expenses, \$4 25—Taxes on Hospital Property, \$323 72 963 38

\$11,624 43

The whole amount of expenses of the City Hospital, for the year, was \$15,465 25, and that of the Hospital for the Insane, \$27,130 05.

We are glad to observe an increase in the list of contributors, who, by the payment of a sum of \$30, become, for life, members of the corporation, and vote for Managers, besides being the body to whom are referred for deliberation and final action questions of any great moment, such as the sale or acquisition of real estate, the erection of new buildings, &c.

Return of the No. of Patients for the year 1844-5, in the City or General Hospital.

| | Pay. | Poor. | Total. |
|--|------|-------|--------|
| Patients remaining in the Hospital, 4 mo., 27, 1844, | 21 | 68 | 89 |
| " admitted within the last year, | 267 | 688 | 955 |
| | 288 | 756 | 1044 |
| " discharged | 270 | 686 | 956 |

Remaining, 4th mo. 26th, 1845, 18 70 88

The average number of patients main

tained during the past year has been 102, of whom 21 were pay, and 81 poor patients

Of the poor patients admitted in this year, 326 were persons who had sustained accidental injury requiring surgical aid. Of this description were also 20 of the cases remaining in the Hospital at the close of the preceding year. Total number of accidents treated during the year, 346.

Of the 955 patients admitted into the Hospital during the past year, there were

| | Males. | Females. | Total. |
|-------------------------------|--------|----------|--------|
| Infants born in the Hospital, | 12 | 11 | 22 |
| Under 18 y'rs of age, | 91 | 28 | 119 |
| Unmarried Adults, | 378 | 93 | 471 |
| Married, " " | 198 | 70 | 268 |
| Widowers and widows, | 50 | 23 | 73 |
| Unknown, | 1 | 0 | 1 |
| | 730 | 225 | 955 |

*The total number of patients admitted to the Hospital from its establishment in 1752, to 4th month, 26th, 1845, has been *forty-one thousand nine hundred and eighty-eight*, of whom *twenty-three thousand two hundred and eighty-three* have been poor people, maintained and treated at the expense of the institution.

From 2d month 11th, 1752, when the first patient was received, to 4th month 26, 1845, there have been

| | |
|---|--------|
| Cured | 26,289 |
| Relieved | 4,936 |
| Removed without having received material benefit | 3,190 |
| Eloped and discharged for misconduct | 1,145 |
| Pregnant women safely delivered | 1,013 |
| Infants born in the Hospital and discharged in health | 955 |
| Died | 4,372 |
| | 41,900 |
| Remaining in the Hospital, 4th, mo. 26th, 1845 | 88 |
| | 41,988 |

Hospital for the Insane.

Patients remaining in the Hospital for the

* Add to this number 537 patients admitted into the Hospital for the Insane during the last four years, and the total will be 42,525.

| | Pay. | Poor. | Total. |
|--|------|-------|--------|
| Insane, 4th mo. 27th, 1844, 117 Patients admitted within the last official year, | 110 | 46 | 156 |
| | 227 | 76 | 303 |
| " discharged, | 103 | 42 | 145 |
| Rem'g, 4th mo. 26th, 1845, 124 | 31 | 158 | |

Dr. John C. Otto.

The craving for excitement and the love of display and notoriety, at the present time, so general among all classes and ages, and we are afraid we must say in both sexes also, sadly interfere with the quiet discharge of their duties, even by those whose properly regulated ambition would make them shun glitter and glare and tinsel show, the mountebank's tricks and the effrontery of the mountebank. In the medical profession, this morbid excitement is manifested in various fashions; some mean and base, others trivial and absurd,—while some, again, are in the guise of good, and, as the parties most actively engaged, would persuade us, disinterested feelings. There would seem to be, in the minds of most young physicians, a belief of the necessity of attracting public attention by means other than, and often extraneous to, the regular and faithful discharge of professional duties. With a few, the honest desire for distinction prompts to continued intellectual labour, in order to attain legitimately the desired result. We can understand, even, how a mere craving for knowledge and the impulse to give out that which has been acquired may manifest itself irrespectively of any prospect of direct personal advantage. But, on the other hand, how often do we not find servile imitation, and of a bad model too, induce medical men to advertise themselves after fashions that belong, or might be expected to belong, to empiricism alone. How many feel a sudden call to become authors, without any knowledge or practice of composition or habits of trained thought? How many to become teachers without having learned?

It is a great relief amidst these discouraging views, when one can look around and see occasionally a picture of an entirely different and contrasted character, — that of a good man and a good physician, pursuing the even tenor of his way, during a long life of active professional duties; and while most deserving, yet still most retiring from public gaze and public applause. Such a man was the late Dr. Otto, an excellent Biographical Memoir of whom, by Dr. Isaac Parrish, was read, not long since, before the College of Physicians. We should like to insert the whole of the Memoir in our Journal; but, for the present, at least, must content ourselves with the following passages:

"His ethical views were based upon the highest moral considerations; he looked upon the physician as properly the minister of good to his fellow beings, and hence, as bound to act in all cases with reference, not to his own interest alone, but to those more elevated and enlarged views which bind us, by the ties of benevolence and humanity, to the common brotherhood of man. In his intercourse with his patients, he was candid, ingenuous, and open, never concealing, from them or their friends, his real views of the nature of their diseases, where such information was important to be known. Towards his professional brethren, his conduct was frank, liberal, and cordial, giving him a just claim to the affectionate regard in which he was held by the medical profession generally. My venerated father used frequently to remark, that Dr. Otto and himself presented a strong illustration of the falsity of the popular idea, that physicians, as a class, were quarrelsome. He and the Doctor lived within one square of each other for a period of thirty years, each busily engaged in kindred pursuits, and liable, had they been so disposed, to come into frequent collision; and yet, by the observance of those amiable and just principles which should regulate our intercourse with each other, they maintained, during the whole period, a warm and constant friendship, vying with each other in acts of kindness and good neighbourhood, rather than in efforts to promote their individual interests at the expense of each other.

"Dr. Otto's private practice was less extensive and lucrative than that of some of his contemporaries of equal standing. He confined himself wholly to the practice of medicine, avoiding surgery and obstetrics; and though he enjoyed the patronage, and confidence of some of the most substantial and respectable families of the city, yet his retiring and unassuming manners prevented him from aspiring to a place amongst the fashionable circles.

Those who knew him best, valued him most, and some of those families who originally employed him had such confidence in his skill; and became so attached to him, that he continued to be their physician during his whole medical career; a period of nearly half a century.

"In the social relations of life, our deceased friend was remarkable for the simplicity and ease of his manners, and for the instruction which pervaded his conversation. He rarely mixed in convivial parties, as they interfered with those habits of life which he had marked out for himself. He generally retired at ten o'clock, and rose before six o'clock in the morning — spending an hour before breakfast in serious reading and meditation, to fit him for the responsible duties of the day. He read the Scriptures morning and evening, and rarely passed a day without perusing a portion of Thomas à Kempis's admirable work, the *Imitation of Christ*."

DR. OTTO AS HOSPITAL PHYSICIAN.

"In the year 1813, Dr. Rush died, and Dr. Otto was appointed to succeed him as one of the Physicians of the Pennsylvania Hospital. A better appointment, for the interests of the Hospital, could not have been made, if untiring devotion to the sick, sound medical knowledge, a matured judgment, and a deep sense of the responsibilities of the post are to be considered as the most important requisites. Had a handsome salary awaited Dr. Otto for the services rendered the institution, instead of their being gratuitously offered, the duties could not have been more faithfully performed. In his treatment of the patients, he united tenderness with firmness, and a humane regard for their health and comfort, with that strict discipline so necessary to the good order of a large hospital. There was nothing rough or austere in his manners, and the poorest and most destitute often found, in their physician, a kind and sympathizing friend. The caste of his mind, and the goodness of his heart, seemed to qualify him especially for the treatment of the insane, who, under the old regulations of the Hospital, were committed to the charge of the attending physician. He took a warm interest in the maladies of this deeply afflicted class of patients, and devoted much time to the study and investigation of their diseases.

"The vast improvements which modern science has introduced for the treatment of diseases of the mind, were heartily embraced by Dr. Otto; and, so far as his influence extended, he gave them his support. Unlike some of the veterans of our profession, whose dread of the spirit of innovation lead them to look with suspicion upon everything new, he was open to the investigation of such novel facts and suggestions as are constantly presented in the advance of our science, and formed his conclusions of their value upon rational principles. In no department of medicine has modern inquiry been

more successfully prosecuted than in the study of insanity; and to the humane mind of Dr. Otto, it must have been a source of peculiar pleasure to observe, that as he was passing from the stage of action, new light was breaking upon this obscure subject, and methods of treatment were instituted more consonant with reason and humanity than those which had prevailed in the early periods of his career.

"Dr. Otto held the situation of Physician to the Pennsylvania Hospital during a period of twenty-two years.

"At his resignation in 1835, the Board of Managers, deeply impressed with the valuable services which he had rendered the institution, adopted the following minute:

"A communication was received from Dr. John C. Otto, resigning the station of Attending Physician, after more than twenty-two years' service most acceptably rendered this institution. The Managers, on parting officially from the Doctor, tender to him their acknowledgments for his long, faithful, and useful labours; and assure him of their cordial regard, and best wishes for whatever may contribute to his future happiness."

Rev. Dr. Boardman's Discourse.

An extract, of some length, from this instructive discourse, has been made for the benefit of our readers in the present number of the Bulletin. We should be glad to see a more frequent interchange of friendly advice and counsel between physicians and divines, — sure that the effects would be mutually advantageous. Engrossed by the variety of subjects that make up the study of medicine, his mind distracted by the multifarious cares and anxieties incident to the practice, a witness to the frequent want of conformity between profession of reliance on religion and the patient endurance of suffering and resignation to the ills of life, and seeing how often temperament more than reputed piety gives the colour to a man's disposition and habitual manner, the physician, although he may be impressed, as most physicians are impressed, with the importance of religious truths, requires, from time to time, to have his attention directed, renewed even, to the advantages of methodical religious observances and teachings.

We have not time now to discuss the question, of the reputed want of Christian faith among medical men

generally, — but shall merely remark that their creed, in this respect, will be found to correspond with that of the people or the age, or even the community in which they live. If they have received, in early life, Christian instruction, they will not forget or neglect it afterwards because they have addicted themselves to the study and practice of medicine, more than if they had engaged in the study of the exact sciences or of natural science, or in the common business of life, as merchant, mechanic, &c. If surrounded by a religious people they will participate in the same feeling with these; although they may not be as rigid formalists or construe in the same sectarian fashion the doctrines taught by our Saviour and his apostles. It is this want of formalism, this under-rating, perhaps unduly, the value of mere observances, — a frame of mind partly growing out of their liberalising studies and partly out of the interruption to a regular compliance with forms, caused by their professional duties, and in part, also, owing to their observation of the frequent contradiction between dogmatical profession and active enlightened Christianity, that medical men have been stigmatised with the charge of lukewarmness in religion and even positive infidelity. We believe, that the charge applies with as little force to them as to any other class in the community. They will be found to exhibit, in proportion to their numbers, as many true believers as the members of any other profession not clerical, or of any other calling; and, taking them in the long run, they will be found, considering their continued and peculiar trials of all kinds, to display as much, we were going to say more, consistency between promise and fulfilment, profession and practice, as any other body of men, *not* excepting, in this particular, even the clerical body.

Still, as we have already remarked, a physician "requires, from time to time, to have his attention directed, renewed even, to the advantages of methodical religious observances and teachings,"

— and we would add, that he will be thankful for being reminded of and exhorted on these matters.

On the other hand, while the clergyman urges the physician to discharge all his religious obligations, and among these is included regular attendance on church, the physician may furnish his clerical friend with some useful hints on physiology and hygiene, by which to render his ministerial functions more efficient and acceptable. Among the subjects under this category it will suffice just now to mention, a more rational fashion of female dress, one more consistent with Christian profession, by which a woman can stoop or kneel with some ease and comfort, and, also, without feeling that she is under purgatorial compression; also, a better ventilation of the churches, so as to secure more attentive and less drowsy hearers; and, finally, a careful study by ministers of the gospel of the physiological history of fanaticism, and an explanation of extacies, assumed intercourse with the Deity or the Saviour, &c., so that they may not admit too credulously, as gifts and outpourings of the Spirit, what is really a device of Satan.

MARINE HOSPITAL AT CLEVELAND.

We learn that an appropriation of \$25,000 was made at the last session of Congress for the erection of a Marine Hospital at Cleveland. A board of Medical officers of the Army were detailed some eight or ten years since, to determine the most suitable points of location for Marine Hospitals on the Western waters. They designated Cleveland on Lake Erie as one point, and a site was subsequently purchased by the United States for this object. We have no objections to our neighbors at Cleveland having a Marine Hospital, and we are glad that Congress has seen fit to indicate a sense of what is due to the sailors navigating these Lakes, by some definite action on the subject. But we think that the necessity of a Hospital at Buffalo will not be diminished by the establishment of one at Cleveland, and we hope that the profession and citizens of this city will use efforts to procure it without further delay. Cleveland was doubtless selected by the board, as an accessible and convenient port, inter-

mediate between Buffalo and Detroit, at a time when it was supposed one hospital would answer all the marine wants of Lake Erie. The great increase of Lake commerce, however, which has since taken place, and its prospective magnitude, require that hospital privileges should be provided at more than one point. In addition to that at Cleveland, an appropriation should be made forthwith for one at Buffalo, and probably, also, ere long, for one at Detroit.

Since the preceding was written we have seen by the newspapers, that an agent has been appointed to superintend the erection of the Hospital at Cleveland, and that the work will be immediately commenced.—*Buffalo Medical Journal.*

GLEANINGS.*

The Orthopædic Anniversary on Friday was very numerously attended, and a large amount of subscriptions (no less than 997.) received. The Duke of Cambridge presided during the early part of the evening; but being obliged to meet another engagement at nine o'clock, His Royal Highness was succeeded by Lord Abinger, who kept the business and pleasure of the day afloat with great tact and feeling till a late hour. Mr. Quarles Harris, Major Strausham, Mr. Buckingham, and others, addressed the company in able speeches; and the whole went off in a manner which must have been highly gratifying to the friends of the institution. In our previous notice we find we erred in saying that Prince Albert had joined it this year. The prince has long been its patron; and it was the presidency of the Duke of Cambridge which was new.

MR. GROOM'S TULIP-SHOW, CLAPHAM RISE.

We were rather unlucky in our weather for a visit to this gay floral galaxy; but it was nevertheless very interesting, though the sun would not shine, and the rain would fall, and the summer cold of our variable climate would nip both fingers and flowers, noses as well as tulips. In the open air the latter were all in tears; and even under the shed they looked somewhat uncomfortable. The petals did not expand their cup-like forms so perfectly as usual, and the beautiful colors were consequently not seen to so much advantage. Several of the rose-tinted were, however, charmingly marked; and among the Bizards, a new variety, called after the Earl of Lincoln, struck us as particularly rich and fine.

* *London Lit. Gaz.*

... of other specimens might ... from the bright bed (worth ... as distinguished from the rest by ... superior attractions; but the whole were exceedingly handsome, and on a more favourable day would no doubt shine to a yet greater advantage. Beyond the show itself, we were much gratified and informed by the conversation of Mr. Groom, whose application of medical science to the improvement of floriculture is extremely curious and valuable in its results, and whose frank disclosure of the means he employed gave us much information.

BATHS AND WASH-HOUSES.

At a forenoon meeting at Willis's rooms on Thursday, the Duke of Cambridge presiding, the past labours of the committee for carrying this philanthropic object into effect were fully detailed, and an account given of the building about to be erected at Whitechapel. The wide extension of the charity (and no charity can be more applauded) was eloquently advocated; and a further subscription set on foot to complete the first establishment, and form a fund for others in different localities of the metropolis.

BIBLIOGRAPHY.

Hope's Pathological Anatomy.*

With some alteration in the title of this work, by designating it as *Outlines of, or Contributions to, Pathological Anatomy*, it must lay claim to the earnest attention and study of every physician who is desirous of acquiring, or of extending his already acquired elementary knowledge of morbid textural and other organic changes. Unless he have

* *Principles and Illustrations of Pathological Anatomy.* Adapted to the *Elements of M. Andral*, and to the *Cyclopædia of Practical Medicine.* Being a complete series of Coloured Lithographic Drawings. From originals by the author. With Summary Allusions to Cases, Symptoms, Treatment, &c. Designed to constitute an Appendix to Works on the Practice of Physic, and to facilitate the Study of Morbid Anatomy in Connexion with Symptoms. By J. Hope, M.D., F.R.S., Physician to the St. Mary-le-Bone Infirmary, &c., &c. First American Edition. Edited by L. M. Lawson, M.D., Professor of Pathological Anatomy and Physiology.

been enlightened by previous intimacy with morbid anatomy, in dissections, he cannot turn to any profitable account his own *post-mortem* inspections, nor describe, with any degree of confidence, the real character of the lesions before him. If we are to qualify this assertion, it will be, to admit that the substitutes for such practical knowledge are in degree presented in Museums and in coloured drawings, with appropriate letter-press descriptions. But as access to a Museum or collection of morbid anatomy is necessarily denied to the many, there remains only the coloured drawings, copied from the recently exposed organ or tissue, as the case may be.

Of the illustrated works on Morbid Anatomy, the chief ones up to the present time, of which limited use could be made, were those of Carswell, Cruveilhier and Hope. We say limited use, for they were, for the most part, only found in public libraries; their cost putting them beyond the reach of the great body of professional readers on this side of the Atlantic. Now, however, thanks to the scientific devotion of Dr. Lawson, and the liberal venture of Messrs. Desilver & Burr, of Cincinnati, the entire work of Dr. Hope, with its two hundred and sixty beautifully coloured figures, exhibiting the chief morbid changes in all the organs of the body, is made readily accessible to American physicians, by a republication, which, in all essential features, will compare very creditably with the original.

We must add to this announcement the observation, that Dr. Lawson has given more than his name to this edition. He has made substantial and apposite additions to the text, calculated materially to enhance the value of the latter, and to make it still more the reflection of the science of the day. In awarding this praise, we are of course aware, that if circumstances had allowed of his giving greater scope to his editorial functions, he could have advantageously increased the number and variety of his commentaries, as, for in-

stance, on Gangrene of the Lungs, and Softening of the Brain, &c.

The author treats of morbid changes of tissue under the heads of the different apparatus and organs; beginning with "The Respiratory Apparatus," then passing to the Liver, Biliary Apparatus, Diseases of the Alimentary Canal below the Diaphragm, Diseases of the Peritoneum, External Cancer, Diseases of the Uterine System, of the Kidneys, the Bladder, the Spleen, and terminating with Diseases of the Spinal Brain and Spinal Cord.

The double title page in the American edition may well be replaced by a single one, and we would, also, suggest that the repetition of the Preface of the author in one of the two Prefaces of the Editor is unnecessary.

Guy's Principles of Forensic Medicine.*

Here we have another work of considerable fulness and detail on Medical Jurisprudence, or, as its author, Dr. Guy, calls it, Forensic Medicine. Following so soon that of Mr. Taylor's on the same subject, it naturally suggests a comparison of its merits with those of the last-named work. In some of the English Journals this has been made, to the disparagement of Dr. Guy, who has been accused of plagiarism, in his copying largely and without acknowledgment from Mr. Taylor. Much stress was laid in the imitation of that part relating to Poisons. The full merits of the question we do not pretend to discuss at this time, and only refer to it, in order to say that we do not consider the charges to be proved, or at any rate, that the *gravamen* is as weighty as the accusers

allege. An industrious critic might, it seems to us, point to Dr. Christison's great work on Poisons, as that from which both Mr. Taylor and Dr. Guy drew largely, and to which they are both more indebted than is Dr. Guy to Mr. Taylor.

The arrangement of his subject by Dr. Guy differs from that of Mr. Taylor; and if it should be conceded that he is less original than the latter in the toxicological department, he, on the other hand, gives a more comprehensive and fuller view of the medico-legal questions growing out of insanity, in which Mr. Taylor was quite too curt. More especially does this remark apply to delirium tremens, which is dismissed by Mr. T. in two paragraphs, whereas Dr. Guy, and still more Dr. Lee, give us both principles and cases for aiding our opinions on this point. The correct physiological basis of the mental faculties is laid down in the work now before us; and we can by this means make some advance towards a solution of the puzzling problem of insanity. On Life Assurance and Feigned Diseases, there is quite an interesting chapter. In fine, we believe we are correct in saying, that the work of Dr. Guy approaches more nearly to a system of medical jurisprudence than any one previously published in England. By this assertion we do not mean to claim for it a superiority over Mr. Taylor's volume. This is just one of these cases in which two fellow students, or two medical friends, who are also neighbours, might judiciously agree, each to purchase one of these two works, so as to give to the parties facility for ready reference to both of them. Dr. Lee has turned to good account the aid derived from Chancellor Kent, as well as the materials contained in various works both European and American, and has altogether acquitted himself well in his relation of editor.

Brierre de Boismont on Hallucination.*

The contents of this volume do not

* Des Hallucinations, ou Histoire Raisonnée

* Principles of Forensic Medicine. By William Guy, M.B., Cantab., Fellow of the Royal College of Physicians, Professor of Forensic Medicine King's College, London; Physician to the King's College Hospital, Honorary Secretary of the Statistical Society, &c. First American edition, with Notes and Additions. By Charles A. Lee, M.D., Professor of Materia Medica and General Pathology in Geneva College; Consulting Physician to the Northern Dispensary of New York, &c. New York: Harper & Brothers. 1845. pp. 711. 8vo.

fully bear out its title. Of Hallucinations in all their varieties, compatible with the possession of reason, and as united with or evidence of insanity in its different forms, or appearing in fevers and chronic maladies, the author does, indeed, treat quite fully; but the other matters promised in the *Histoire Raisonnée* are not brought out in corresponding relief. A long chapter is devoted to the subject of the hallucinations in Delirium Tremens; another to the hallucinations in *extase*, magnetism and somnambulism. The author, a little further on (Chapter XV.), examines the disease in its relations to psychology, history, morals, and religion; and assuredly, in all these divisions, it is calculated to elucidate much that is obscure, and to dispel much that is now marvellous.

This volume comes quite seasonably just now, when common sense is cast off from its moorings into the eddy of all kinds of absurdities; and when, on the one hand, hysterical girls and half-crazed men are sometimes regarded as holding, by special gift, direct intercourse with the Deity, and revealing his intentions and decrees; and, on the other hand, the real and undoubted mysteries of faith and the miracles recorded in holy writ are pretended to be explained as so many myths and feats of animal magnetism. If between the sublimated and extatic pietists of the former set, and the infidel transcendentalism of the latter, there is no real danger to the churches generally, there certainly is harm done to many well meaning if not over-wise and studious Christians. Here, as we have so recently had occasion to remark, physicians may well be invited to join in council with their clerical brethren, to aid in the solution of these mixed questions of matter and mind, morals

and health, religious excitements and temperament.

Fox and Harris on the Teeth.

We learn, with pleasure, that the valued work of Joseph Fox, entitled "The History and Treatment of the Diseases of the Teeth, Gums, &c." with the requisite additions and annotations by Dr. Chapin Harris, will be published ere long by Messrs. Barrington & Haswell.

It has been the good fortune of Mr. Fox's work to maintain, in successive editions up to the present time, the reputation which it acquired on its first appearance. Of Mr. Fox, Mr. Thomas Bell, himself so distinguished in dental surgery, remarks, that "the sober, reflective habits of his mind, joined to a regular professional education, enabled him to obtain from an extensive practice such a knowledge of the diseases of these organs, and such well-grounded principles in their treatment, as to render his work a very valuable acquisition, not to the professed dentist only, but particularly to the general practitioner; a class of the profession to which his labours were especially devoted, as he lectured on this subject for many years in the theatre of Guy's Hospital." Of Dr. Harris's entire competency to fulfil the expectations that will be formed of him, as editor of Mr. Fox's work, the professional public has had ample proofs, within the last few years, in his own systematic treatises and in his large contributions to the Journal of Dental Surgery.

The same publishers are about to put to press — Outline Drawings of the Arteries — with brief Descriptions. By Dr. John Neill, of this city.

In our next number we hope to be able to announce the publication of M. Rayer's large and comprehensive "Treatise on the Diseases of the Skin." With Notes and other Additions, by John Bell, M.D., including accurate copies of all the coloured engravings in the original work.

des Apparitions, des Visions, des Songes, de l'Extase, du Magnetism and du Somnambulism. Par A. Briere de Boismont, D. M. P., Directeur d'un Etablissement d'Aliénés, &c., &c. Paris: Germer Baillière. 1845. pp. 615. 8vo.

THE
BULLETIN OF MEDICAL SCIENCE.

VOL. III.]

Philadelphia, August, 1845.

[No. 8.]

Weather and Diseases of Philadelphia, in
1844.

(Meeting of the College of Physicians, Feb.
5th, 1845.)

Dr. Moore presented and read the
*Annual Report on Meteorology and
Epidemics*, the substance of which is
as follows:

*A Concise Statement of the Weather
in 1844.*

January may be pronounced to have been a cold, wintry month. The mean temperature was 28° , which is somewhat lower than the average for the last fifteen years. The highest temperature observed was on the 17th, when the thermometer rose to 54° . At 2 P.M. of the same day, there came on a squall of wind and rain, attended with a remarkable depression of the mercury in the barometer from 29.3 inches to 28.9; and, during the storm, the thermometer fell 12° . These phenomena occurred within the period of half an hour. During the last week of the month, there was uninterrupted severe frost. On the 27th, the thermometer was observed at 9° before sunrise, and rose to 16° . On the 28th, the temperature was 8° , and in the middle of the day it was 19° . These were the coldest days observed. The predominant course of the wind was N. of W. On four days there was rain, and snow fell on five. Both collectively measured, in fluid, 4 inches, which appears to have been the average noted in January for fifteen years. For want

of a series of observations in preceding years, the degree of evaporation can only be compared with what occurred in 1843. From this comparison, the month appears to have been dry.

February of the season, the weather in February was dry and pleasant. There were but few days in which the cheering rays of the sun was not observed. For thirteen days the wind blew from the South; and, of these, only on one did it proceed from the East of South. The 10th proved the coldest day, the thermometer ranging from 11° to 26° . The warmest day was on the 23d, when the thermometer rose from 34° to 38° . On only four days can it be said that there was no frost. The mean temperature for the month was 32° , which accords with what has been observed during the last ten years. On three days rain fell, and on four, snow was observed. The quantity of water obtained, measured 1.45 inch; much less than is usually collected in February.

March. — For fifteen years, March has been generally colder, and the extremes of temperature observed have been greater, than in the present year. The greatest height to which the thermometer rose was 67° ; this happened on the 25th of the month. On the same day, before sunrise, the thermometer stood at 37° . This exhibits a range of 30° , the greatest noticed in the month, and not exceeded in the corresponding season for many years. The lowest temperature before sunrise was on the 5th, when the degree ob-

served was 26°. On the 31st, the same temperature, both in the morning and in the middle of the day. On the evening of the 30th, there was a storm with lightning and thunder. On the succeeding morning, the tops of the houses were covered with snow. The mean temperature for the month was 44°, and the mean range, from morning to mid-day, was 13°. The sudden transitions and wide range of temperature may be considered as characteristic of the month of March. Five cloudless days were observed. On eight days the sky was completely overcast. On ten days there was rain; twice, when the sky has been occasionally veiled with clouds, the rain came in momentary showers. Twice snow was observed. From these sources, the water collected measured 4.53 inches. The barometer ranged from 29.4-100 inch, to 30.2-100 inch. For eight days, the wind blew steadily from the South of West; and on four other days, the wind came occasionally from the same quarter. During five entire days, the wind came from the North of East; and for a portion of four days, the wind had the same direction. For one entire day, the wind was from the South of East; and for a portion of two days, it came from the same point of the compass.

April.—The weather set in cold and clear. The thermometer, on the 1st of the month, stood at 27° early in the morning, and rose to 41° in the course of the day. The wind was fresh, and from the N.E. On the 4th, the thermometer ranged from 42° to 75°. From this period, there was a succession of warm, summer weather. On the 10th, the peach trees were in blossom. On the 15th, the temperature ranged from 58° to 84°. The Missouri currant was now in bloom; at least ten days earlier than this phenomenon was observed in 1843. The mean temperature for the month was 58°, and the extremes were 27° and 84°. The greatest diurnal range was 33°, as noticed on the 4th. The mean range, from morning to mid-day was 17°. The greatest elevation of the mercury in the barometer, according to the table presented, was 30.6 inches. Some persons noticed it to have been 30.8; this difference may be attri-

buted to the position of the instrument. Until the 24th, only .30 of an inch of rain was collected; but from the rain which afterwards fell, the deficiency was not so remarkable; for the entire quantity measured 1.35 inch. In April, 1843, the quantity of rain did not exceed .70 of an inch. Lightning and thunder occurred in the afternoon of the 26th, succeeded by a beautiful rainbow. For eleven entire days, the wind blew from the North of West, and on three days, it came occasionally from the same quarter. On the 22d and 23d, the wind was from the South of East. On four days not a cloud was seen, and nineteen days were variable.

May.—During this month, the temperature was that of warm summer weather, accompanied by light and genial showers. The mean degree of heat before sunrise was 59°; at mid-day, 73°; at these respective periods the extremes were 42° and 81°. S.W. winds prevailed for more than half the month. For seven days, the wind was from the N.W.; and on the 22d and 30th it came from the N.E. It blew from the S.E. for the greater part of six days. The sky was completely overcast only for one day. Four days were without a cloud. The remaining twenty-six days presented clouds of various forms, with the cheering aspect of the sun. Rain was observed on fifteen days; often in inappreciable quantity. What was collected measured 3.09 inches. Lightning and thunder frequently accompanied these showers. On the 9th, fire-flies were seen, like little stars, moving over the surface of the ground.

June.—The rapid progress of vegetation during May, afforded in the beginning of June, the indication of an early and abundant harvest. In the warm and well cultivated portions of the State, the farmers commenced cutting the rye and wheat during the last week. The cheering and active scenes of mowing, reaping, and cradling were observed simultaneously in these districts. In some places the rye, and even the wheat, were successfully gathered in before the close of the month. The extremes of temperature in the morning were 54° and 76°; the mean was 63°. At mid-day, the highest degree of heat was 91°, and the lowest was 63°; the mean was 78°. For the whole month, the mean temperature was 70°. The greatest range of the thermometer, from before sunrise to the warmest portion of the day, was 22°, and the mean range was 15°.

South Westerly winds prevailed. Six days were without a cloud. The sky pre-

sented a variable aspect of fleecy and figured clouds during twenty-one days. For three days the sky was overcast; rain fell on these days, and light showers were noticed on four other days: this measured 3.35 inches. On the morning of the 11th, the thermometer with a moistened bulb stood at 42° ; while that with a dry bulb indicated a temperature at 52° : the evidence of extreme dryness in the air. Very rarely was dew observed on the ground.

July. — The weather was very warm and dry during the three weeks closing with the 25th of the month. To this must be excepted the 4th and 5th. On the former of these days, the thermometer ranged from 62° to 70° ; and on the latter, from 56° to 76° . The highest temperature observed in the morning was 76° ; at mid-day, 95° . During this period of the month there were sprinklings of rain. On the 17th, and part of the succeeding day, the wind was from the N.E.; with this exception, Westerly winds prevailed. The remainder of the month was cool and moist, there being an equal proportion of Easterly and Westerly winds. The mean temperature during the closing portion of the month was 73° ; the extremes were 61° and 85° . For the entire month, the mean degree of heat was 77° . Upon examining the meteorological tables for the last fifteen years, the month under consideration exceeded in heat any recorded since 1838, when the mean temperature was 80° . The quantity of rain collected during the month measured 5.28 inches; surpassed only by what fell in July, 1842, when 11.70 inches were collected.

August. — The heat, which had declined during the latter portion of July, increased considerably until the 11th of the present month. The mean temperature in the morning was 70° , and at mid-day, 83° . The prevailing wind was from the South of West; the sky seldom perfectly clear, though no day was completely overcast. Not any rain was noted during this period. After this, Northerly winds prevailed, and the air became cooler; the extremes of temperature being 66° and 86° . Light showers were occasionally observed. 2.40 inches indicate the quantity of rain which fell during the month.

September. — September proved more uniform in its temperature than generally characterizes the month in this climate. The storm, so generally observed when the sun crosses the line, was neither severe, nor of long duration. The weather, during the

early portion, was calm and serene. The 12th was the only day, during three weeks, in which the sky was completely overcast. There was, however, an abundant shower on the 2d, which, according to the rain gauge, measured 1.26 inches. The morning of the 19th was remarkably dry; the difference between the wet and dry thermometer was 10° . No traces of dew were seen on the grass. On the morning of the 29th the temperature noted was 44° . In the course of the day the thermometer fell to 44° , at which point it was observed on the succeeding morning. During the month, the extremes of temperature observed in the morning were 68° and 44° ; at mid-day the extremes were 80° and 44° . The mean temperature for the month was 66° . For ten days the wind came from the N.E., and for eight days it prevailed from the N.W. Besides what has been already noticed, rain fell on the 21st, 25th, 28th, and 29th, in quantity, measuring 2.68, which, added to what had previously fallen, amounted to 4.03. This is about the average quantity observed in September for the last ten years.

October. — The month set in warm, clear, and dry. The thermometer varied from 40° to 56° before sunrise, and in the course of the day from 56° to 73° . The mean for the first ten days was 57° . After the 10th of the month, the weather became cooler, though southerly winds prevailed. During this period only one cloudless day was observed. On the 18th, it blew a heavy gale from the S.E., accompanied by 1.48 inches of rain. The storm committed great ravages in the vicinity of the city. The accounts from the West and the North described the destruction as very great. The closing portion of the month was mild, cloudy, and wet; the rain measuring 2.20 inches. The predominating current of wind was from the N.E. Reviewing the month, the highest temperature was 73° . On the 30th, the thermometer was at 38° in the morning, and rose to 42° ; this was the coldest day. The mean temperature for the month was 54° . The rain amounted to 5.02.

From the warmth and moisture which prevailed, vegetation, that had been checked by the dryness and low temperature of September, now advanced, and the fields acquired a beautiful verdure. The markets continued to be supplied with fruits and the more tender esculent plants, as peas, beans, and tomatoes.

November. — The weather, during more

than half the month, was exceedingly mild; scarcely ever surpassed, at this season of the year, in our climate. In the morning, the mean temperature rather exceeded 42°. Ice was not observed until the morning of the 19th, when the thermometer stood at 32°. The greatest heat observed at mid-day was 62°. Towards the close of the month, the weather became colder, yet the thermometer never fell below 28°. The mean temperature for the month was 45°; the extremes have been already expressed. The barometer never rose above 30.2 inches, and was not observed lower than 29.5. Westerly winds prevailed. There were eleven cloudy days, and on nine days it rained, and twice hail were noticed. The rain gauge indicated only 2.95 inches.

December. — Mild and moderate weather, with little rain, characterized the month. The lowest degree of heat observed before sunrise was 22°, and at this period of the day, the mean temperature was 30°. At mid-day, the thermometer rose to 60°, on the 7th of the month, and on the 28th, it did not rise above 28°. The mean degree of heat observed during the month was 35°. Though there were but two cloudless days, the rain and melted snow measured only 2.75 inches. Northerly and Southerly winds were equally balanced; the wind came more frequently from the West than the East. Twice there was snow, and rain was noticed on four days. The mercury in the barometer stood for two days at 30.2, the wind blowing from the N. E. without rain; on the 23d, it fell to 28.9, the wind blowing from the West of North, accompanied by rain in the morning, and by snow in the evening.

Prevailing Diseases. — In tracing the diseases which occurred in 1843, the statement was made, that inflammatory affections of the mucous membrane lining the lungs and the passages communicating with the air we breathe, are observed at all seasons of the year; though their greater prevalence occurred before and about the vernal equinox, and after the sun had crossed the Equator in September. When this statement was made, the numerical proportion of such affections to the diseases of other parts of the system had not been the subject of particular attention. The cases noted in a limited field of observation would induce a belief, that one-third might be referred to inflammation of the membrane adverted to, constituting the catarrh and bronchitis of medical writers. By the

latter title, the fatal instances are recorded in the list of interments in the city and adjoining districts. In the period embraced in the present report, such affections have not been considered epidemic. Until after the autumnal equinox, the assemblage of symptoms corresponded with the character given to catarrh by nosological writers. In October and the two succeeding months, the disease became more prevalent, and was generally ushered in by rigors, accompanied, often, by severe pain in the limbs. To these were superadded great disturbance of the stomach, indicated by nausea and bilious vomiting. In a few cases, diarrhoea was observed. The disturbance of the digestive organs prompted the exhibition of emetics; the operation of which, in many cases, was followed by a cessation of the nausea, and a mitigation of all the symptoms.

Inflammation of the other pulmonary tissues seems to have been in the proportion and degree observed in ordinary years. The bills of mortality do not indicate any greater number of fatal cases.

Of the Exanthemata, Scarlatina occupied the most conspicuous rank. During the months of January, February, and March, there were many fatal cases. In a widely-extended population, varying in habits and constitution, and operated on by causes not yet appreciated by medical writers, Scarlatina, like other epidemics, does not affect different individuals with equal severity. The disease was often mild, consisting merely of a scarlet efflorescence, with little or no affection of the throat. Considerable tumefaction of the tonsils, attended by an accumulation of mucus, and great difficulty in swallowing, was observed in most of the fatal cases. In some instances, extreme prostration of the system was observed at the very onset; in other instances, the indications of danger came on later. Fœtor of the breath was observed in the malignant forms, and was always a cause for apprehending a fatal issue. Death seemed to be often occasioned by the disease pervading the pulmonary tissues, oppressing respiration, and causing a livid appearance of the face. Lethargy, coma, and convulsions showed that the brain was implicated, and death was often induced by the determination or translation of the disease to the cerebral system. On a retrocession of the irruption, the symptoms generally announced this important organ to be affected. The acid odor of the breath was not uniformly associated with the corresponding acid condition of the

urine, as observed in former years. The mortality falls far short of what was recorded in 1843.

Measles were rarely observed. From direct experience, no opportunity was afforded of noting the peculiar character of the disease. One person is recorded to have died of measles in March, and another in May.

The ravages from Small-pox, which, in 1843, had been so appalling, were observed to have greatly declined in 1845. Since the last report presented by your Committee, it is gratifying to be able to state that the mortality from this loathsome disease has been comparatively small. In March and May the disease appears to have been the most fatal. In February, July, September, October, and November, no deaths were recorded. In August, one person is recorded to have died of Small-pox, and in December, two persons are stated to have been carried off by the disease. The total number of fatal cases, as far as ascertained, appears to have been nineteen.

An eruptive disease, bearing a resemblance to Small-pox, has been noticed throughout the year, though perhaps not so frequently as for some years past. If the information obtained be correct, such disease was observed at a period when Small-pox is supposed not to have existed within the city and adjoining districts. Headache, pain in the limbs and back, with some degree of nausea, were first noticed in the evening. To these symptoms succeeded fever, with slight remissions towards morning. At this period, the skin was often observed to be moist. Morning remissions and evening exacerbations prevailed until the morning of the fourth or fifth day, when the eruption generally attracted attention. When fully developed, on the second or third day, the eruption was generally conoidal, accompanied by pruritus, not always in proportion to the number of the poxæ. On the fifth day, counting from the first appearance of the eruption, desquamation commenced.

Erysipelas was less the subject of medical attention than in 1843. Early in the year, in addition to the febrile affection and nausea that usually precede the inflammation of the skin, pain in the ear, and soreness of throat, were not unfrequently a source of great uneasiness. In December, the disease was ushered in by rigors and severe pain in the limbs, and more aggravated than in former seasons. The records of the Board of Health indicate fewer deaths than in the two preceding years.

22*

Many cases of Erythema came under notice. A considerable proportion were occasioned by punctured and lacerated wounds. Where such local causes could not be traced, considering the peculiar temperature so long prevalent, it seems reasonable to refer the production of the disease, in some instances, to atmospheric influence—the acknowledged cause of some specific forms of Erythema. The ingesta, in some instances, proved to be the exciting cause; of which an example is afforded in the following case:

In November, some turnips, after being prepared for the table, by their peculiar appearance excited some apprehension in the cook. The instructions she received was to throw them away. Notwithstanding this admonition, one of the domestics, a young woman, chose to eat of them. In the evening she was affected with nausea and vomiting, accompanied by severe headache and pain in her limbs. On the succeeding morning, her skin was observed to be affected. When visited, she complained of soreness of the throat and some difficulty in swallowing. She had nausea, and occasionally bilious vomiting. The tongue was covered with a white fur, but the papillæ were not elevated, as is observed in Scarlatina when the eruption first makes its appearance. There was an efflorescence of large, red blotches on the face; the eyelids were slightly swollen. On the trunk and extremities the blotches were more defined; generally of an oblong or oval figure, varying from three to four inches in diameter. Their surface was smooth, the color shading off towards the margin. The limbs appeared somewhat tumid, firm, but not pitting. She complained of a sense of itching and heat. The skin was warmer than natural, and the pulse accelerated, indicating some degree of fever. The efflorescence continued for three days. The treatment consisted in the administration, at the first visit, of an antimonial emetic, succeeded by the exhibition of mild aperients. A bland diet was enjoined, such as the decoctions of rice and barley; and she was allowed a liberal use of cool water.

The Eczema Solaris was observed as early as the month of May, when, according to the remarks already made, the temperature equalled that of mid-summer. The other forms of Eczema, so generally traced to sudden vicissitudes of temperature, were noticed less during the summer than in the other portions of the year.

The *Lichen tropicus*, or Prickly Heat, was rarely observed.

Affections of the Brain were more frequently observed than in 1843. Apoplexy and Palsy were particularly conspicuous. The deaths from the former disease exceeded what have been generally recorded, though the mortality during the hot summer months of 1825 and 1838 surpassed what was observed during the past summer. Inflammation of the brain was of frequent occurrence; the bills of mortality do not, however, indicate an unusual proportion of deaths from this source. Of the remarkable affection of the cerebral and nervous system, in connection with fever of a low type, exhibiting a curious cataleptic condition, a very interesting history has been already presented by a distinguished Fellow of the College. Similar cases came within the sphere of our observation, but under circumstances not favourable for watching the rise and progress of the disease. According to the notes preserved, these cases occurred in September and October.

To the quality and quantity of the ingesta, many of the acute morbid derangements of the stomach and bowels may be readily traced. Accordingly, affections of this character occur at all seasons of the year. Inflammation of the alimentary canal proceeds more frequently from the food that has been taken than from any atmospheric influence, though exposure to cold seems often to contribute in occasioning the disease. The weekly lists of interments present the greatest number of deaths from inflammation of the stomach and bowels in June, and the smallest in February. Colic being caused, most commonly, by irregularities in diet, and by inattention to the due discharge of the feces, is confined to no period of the year. In September, and during the subsequent months, the disease was often accompanied by bilious vomiting. In these cases the mild chloride of mercury, given in grain doses, at short intervals, seemed to exert the most favourable influence; correcting the irritability of the stomach, and bringing about a free discharge from the bowels, ineffectually attempted by enemata and purgatives of a bulky form. Some cases of Cholera were noticed in March, apparently occasioned by the character of the food. The Cholera incident to children during the period of the primary dentition, was observed early in May; and proved fatal to eight persons of this age, as recorded in the bills published by the

Board of Health. Infantly, the deaths from this source amounted to one hundred and sixteen. The aggregate number of children who died of Cholera, during the summer months, is stated to have been two hundred and thirty. In 1843, the annual bill exhibits two hundred and sixty-eight deaths from Cholera Infantum.

Diarrhoea and Dysentery were more frequently the subject of medical attention than in ordinary years. Dysentery was comparatively mild, and yielded readily to gentle purgatives, succeeded by the compound powder of ipecacuanha, combined with the blue mass, or given with the syrup of tolu, according to the ability of the patient to swallow pills, or to take the medicine in the other form.

The city of Philadelphia and the associated districts include a large population, of diversified habits and occupations, and exposed to the several causes inducing fevers of various type. On the borders of the Schuylkill, and in the neighbourhood of pools of stagnant water, with which many sections abound, intermittents and remittents were occasionally observed in January. They became more frequent towards the vernal equinox, and prevailed extensively during the months of September and October, after which period the decline was very perceptible. In the densely built portion of the city and districts, in ill-ventilated apartments, the fevers were of a typhous and typhoid character, according to the nomenclature now in use. From actual observation, it was difficult to give any account of the typhus which seems to have been the frequent cause of death throughout the year. Typhoid fever, corresponding to the Synochus of Cullen, seemed principally to affect delicate females, and persons of the other sex just approaching the age of puberty. The nervous affection accompanying several cases of this form of fever has been already anticipated in the remarks presented in the earlier portion of this report. When the cataleptic condition was not present, advantage seemed to have been gained by the exhibition of remedies adapted to allay the irritation, — a practice which it is believed is gaining ground. The cases which came under notice did not assume the protracted form occasionally met with in former years. For the most part, the disease terminated in the course of three weeks, leaving the patient extremely emaciated and feeble, and the convalescence was consequently slow.

SUMMARY.

| Year 1844 | TEMPERATURE | | | RANGE. | | DEW POINT. | | BAROMETER. | | WIND. | | | | WEATHER. | | | | | RAIN AND MELTED SNOW IN INCHES. | | | |
|------------------|-------------|---------|-------|----------|-------|------------|---------|------------|----------|-----------------------|-------------|-------------|-------------|----------------|--------|-----------|---------|--------|--|------------------------|-------|------|
| | | | | | | | | | | Days the wind blew | | | | Days that were | | | | | | | | |
| | Highest. | Lowest. | Mean. | Highest. | Mean. | Highest. | Lowest. | Mean. | Highest. | Lowest. | N. of East. | S. of East. | S. of West. | N. of West. | Clear. | Variable. | Cloudy. | Rainy. | | Hail and Snow- ing. | | |
| January, | 54 | 8 | 23 | 16 | 7 | 40 | 20 | 30 | 30 | 28 | 9 | 7 | 2 | 5 | 17 | 7 | 16 | 8 | 4 | 5 | 4.05 | |
| February, | 58 | 12 | 32 | 24 | 10 | 38 | 8 | 24 | 30 | 29 | 4 | 6 | 2 | 9 | 11 | 4 | 20 | 5 | 3 | 4 | 1.43 | |
| March, | 67 | 26 | 44 | 30 | 13 | 55 | 12 | 35 | 30 | 29 | 4 | 7 | 2 | 10 | 12 | 5 | 18 | 8 | 10 | 2 | 4.43 | |
| April, | 84 | 27 | 54 | 33 | 17 | 67 | 20 | 45 | 30 | 29 | 7 | 14 | 2 | 16 | 4 | 4 | 19 | 7 | 6 | .. | 1.35 | |
| May, | 88 | 42 | 66 | 26 | 15 | 75 | 33 | 54 | 30 | 29 | 6 | 2 | 4 | 18 | 7 | 4 | 26 | 1 | 15 | .. | 3.09 | |
| June, | 91 | 54 | 70 | 22 | 15 | 72 | 28 | 57 | 30 | 29 | 7 | 5 | 4 | 13 | 8 | 6 | 21 | 3 | 8 | .. | 3.35 | |
| July, | 93 | 56 | 77 | 21 | 14 | 74 | 36 | 62 | 30 | 29 | 6 | 4 | 3 | 15 | 9 | 7 | 20 | 4 | 12 | .. | 5.28 | |
| August, | 90 | 57 | 73 | 20 | 13 | 76 | 43 | 61 | 30 | 29 | 5 | 4 | 2 | 14 | 11 | .. | 30 | 1 | 6 | .. | 2.41 | |
| September, | 86 | 44 | 66 | 21 | 14 | 72 | 31 | 55 | 30 | 29 | 3 | 10 | 4 | 8 | 8 | 7 | 19 | 4 | 6 | .. | 4.03 | |
| October, | 73 | 18 | 54 | 23 | 11 | 68 | 28 | .. | 30 | 29 | 4 | 10 | 4 | 11 | 6 | 6 | 12 | 13 | 9 | .. | 5.02 | |
| November, | 62 | 28 | 45 | 22 | 9 | 54 | 10 | .. | 30 | 29 | 5 | 8 | 1 | 10 | 11 | 4 | 15 | 11 | 9 | 11 | 2 | 2.95 |
| December, | 60 | 22 | 35 | 19 | 7 | 60 | 15 | 28 | 30 | 29 | 9 | 6 | 3 | 12 | 10 | 2 | 19 | 10 | 4 | 11 | 2 | 2.75 |
| Mean, | | | 54 | | 12 | | | | Total, | 33 | 34 | 135 | 114 | 56 | 227 | 75 | 92 | | 15 | | 40.16 | |

—Summary of Transactions of the Col. of Phys. of Philadelphia.

ON THE STRUCTURE AND DEVELOPMENT OF THE BLOOD CORPUSCLES.

*The development of the blood corpuscle in insects and other invertebrata, and its comparison with that of man and the vertebrata.**

By GEORGE NEWFOOT, Esq., F.R.C.S.

The author commences his paper by remarking, that he was led to the present inquiry by some curious facts relating to the blood of insects, which attracted his notice while engaged on the last paper he presented to the Royal Society, on the reproduction of lost parts in insects and myriapoda. Some of these facts he is desirous of making known at once to the society, preparatory to his offering them more extended researches on the blood of the invertebrata, and its comparison with that of the higher animals.

The chief purpose of the author in the present paper is to show the analogy which exists between the different

corpuscles in the blood of insects and of the vertebrata, to trace the changes which the former undergo as compared with those of the latter, and to show that in development and function they are analogous to secreting cells. — *Dublin Press.*

In pursuance of this object, he promises a brief notice of what little was already known respecting the corpuscles in the articulates, and of the different descriptions given of it by Carus, Spence, Wagner, Bowerbank, Edwards, Baly, and some later observers, all of whom have described it differently, one only, Mr. Bowerbank, having correctly indicated its form. He then proceeds to state, that while engaged on other observations in June last, he found that the oat-shaped corpuscles, which are so abundant in the caterpillar state of the insect, almost entirely disappear before the insect has arrived at the perfect, or butterfly state, in which a few days after the insect is fully developed, scarcely a single oat-shaped corpuscle is to be found; but in the place of these, there are numerous very minute rounded bodies, spherules, and also many flattened, obtusely, oval or barrel-shaped, double concave discs. Both these forms of corpuscle have molecular movements, which are most energetic in the spherules.

* Paper read before the Royal Society.

He next makes some general observations on the composition of the blood of the invertebrata, and calls in question the accuracy of Professor Wagner's view in regarding the blood of these animals as analogous only to the chyle of the vertebrata, at the same time stating his belief that it is not only analogous to true blood, but that it undergoes a continued succession of changes through the agency of the corpuscles. These minute bodies first derive nourishment and the means of growth and increase from the fluid portion of the blood; and afterwards, when they have become fully developed, undergo dissolution, and help to supply the waste of the fluid that has been expended on the nourishment of the different structures, leaving other little bodies, which also undergo development, to assist in the further elaboration of this fluid. He states also, that the development of these latter bodies appears to have a certain relation to the type of each particular class of animals; and remarks that in the vertebrata the size of the corpuscle is perhaps in a ratio inverse to that of the activity and extent of the function of respiration.

The author states that he has been led to these views, which appear to him to apply to animals generally, by an examination of the corpuscles, and by watching the changes which take place in the blood in lepidopterous insects; and he points out their accordance with those of Wagner, Henle, and Wharton Jones, with regard to the function of the corpuscles; but proposes to give the details on which his own view respecting the size of the corpuscle is founded on a future occasion. He then enters more particularly on the consideration of the forms of corpuscle in the blood in the articlata, which he marks as four; although, he observes, they are in reality only so many stages of development of one ultimate structure. These forms are;—first, the *molecules*, which he regards as comparable to the molecules observed in the chyle of vertebrata by Mr. Gulliver; secondly, the *nucleated* or *oat-shaped corpuscle*, which he believes with Wagner are analogous to the white, or chyle corpuscles of vertebrata; thirdly, the *spherules*, or minute rounded bodies developed from the oat-shaped corpuscle, and which he believes are analogous to the free nucleoli of Valentin, and probably to the very minute white, opaque granules constantly observed in the blood of vertebrata; and lastly, the *discs*, which are further developments of the spherules, and analogous to the true red blood-discs of the higher animals, and which, as he states in a subsequent part of his paper, in his examination of the blood of the human fœtus, he believes that he has also traced from the white, opaque granules or spherules.

The author then proceeds to describe these forms of the corpuscle in insects more minutely, and enters into considerable detail with reference to the oat-shaped corpuscle, tracing it from its earliest distinct form, before any nucleus is perceptible in it; and shows that the nucleoli

which constitute this body are gradually increased in number, until the corpuscle has attained its full size, when it first changes its form and becomes shorter, then rounded, and afterwards entirely breaks up and liberates the nucleoli that have been developed within it. This change of form he shows always takes place very rapidly in all the oat-shaped corpuscles, large and small, when out of the body, and to this circumstance he attributes the diversity in the descriptions that have been given by various observers of the form of the corpuscle. He shows also, that, with reference to the function of this body, the corpuscles are usually found in greatest number during the act of breaking up, immediately before the larva is preparing to change its skin, at which time the blood is extremely coagulable; and that there are fewest corpuscles, or that there is the greatest number of small corpuscles of this kind, soon after the caterpillar has again begun to feed. When the insect has assumed the pupa state, nearly the whole of these corpuscles are broken up. The greatest abundance of them is found in the act of changing, on the third or fourth day of the pupa, after which the number of these corpuscles is gradually lessened, until, when the insect has entered the perfect state, very few remain. When the change to the perfect insect occurs, there is another opportunity of watching the function of this corpuscle. When the wings are being expanded and still soft, a few oat-shaped corpuscles circulate through them; but as the wings become consolidated, these corpuscles appear to be arrested, and break down in the circulatory passages, supplying directly the material for the consolidation of these structures; as appears from the entire arrest of circulation in these parts, and from the granular remains of the corpuscles which may be seen by transmitted light in a wing completely denuded of its scales on the upper and under surfaces. The spherules and discs of the perfect lepidopterous insect are then noticed; and some peculiar clavate or fiddle-shaped bodies, which appear to be the transition forms between spherules and discs, are pointed out as occurring in the blood of one of the night moths, *xylophasia polyodon*, and also in the butterfly soon after it has left the pupa state. These facts are regarded as proofs, derived from direct observation, of the function of the corpuscle, and of its analogy, both in function and development, to the secreting cells of glands.

In the second division of his paper, the author draws some comparisons between the blood corpuscles of insects and the vertebrata, and gives the details of a series of observations on the blood of a human fœtus that was born alive at the end of the sixth month. He examined the blood of the parent, and of the placenta, and also of different parts of the body of the fœtus a few hours after death, and found in general that the blood of the parent contained a very large quantity of white chyle corpuscles, and was extremely coagulable; the blood of the

placenta contained, beside an abundance of chyle corpuscles, red blood discs of extremely variable sizes, the largest being one-third or one-fourth larger than those of the mother, and the smallest scarcely more than one-fourth as large as the largest. There were also an immense abundance of molecules and nucleoli, from which latter the red blood discs appeared to be developed. The blood of the vein and lungs presented a similar irregular condition as to size of the corpuscles, while that of the left auricle of the heart, aorta and arteries of the cord was more uniform in its character. From these observations the author concludes, that the blood of the vertebrata is analogous in its mode of development to that of the insects and other invertebrata, and that the red blood discs are the ultimate developments of the opaque, white granules or nucleoli of the blood. — *Phil. Jour.*

CASES OF PHTHISIS TREATED WITH NAPHTHA.*

With observations by O.B. BELLINGHAM, M.D. &c. Among the medicines which have recently been introduced to the notice of the profession, few have been put forward with greater pretensions than the Medicinal Naphtha; its advocates asserting that it is capable of arresting the progress of phthisis, and of bringing about the cure of a disease which has been hitherto considered as almost incurable. With the object of testing its powers in phthisis, the naphtha was administered in the following cases, and with what success, will appear from the accompanying details: —

CASE. I. — Bridget Hyland, ætat. 26, unmarried, native of the county Westmeath, admitted into St. Vincent's Hospital, December 31, 1844. Hair and eyes brown; complexion dark; no employment; has always lived at home with her parents; one sister (five years since) died of phthisis; her father died of the same disease.

States that she has been seriously ill for one year; illness commenced with cough and irregularity of menstrual secretion; had an attack of hæmoptysis ten months ago, and every three weeks since has expectorated blood for two days; now the sputa are only streaked with blood. Nine months ago was attacked with severe pain in left side over false ribs; this has diminished since,

and is only complained of now when coughing. The menstrual secretion has been absent for the last three months. She suffers principally from cough, dyspnoea, and soreness about the gastric region, extending upwards along the sternum; is very much emaciated; the last fortnight; she is chilly during the day, and perspirations come on as soon as she falls asleep. Complaints of disagreeable burning heat in the palms of hands and soles of the feet; expectoration free, rather abundant, viscid, and yellowish green; pain on coughing in left side; appetite bad; mouth dry; bowels regular; pulse small, 116, in sitting posture.

Chest emaciated, flattened under clavicles; pain on percussion of both sides in this situation. On left side loud gargouillement accompanying both inspiration and expiration over large surface, extending from below clavicle to the third rib, accompanied by a bronchial wheeze in one place. On right side gargouillement over a large surface, but not so loud as on right side.

R Naphthæ, gr. x.
Infus. lini comp. ʒi.
Admoveatur ter die sumendus.
January 7th. The epigastric uneasiness has been relieved by the blister; expectoration not so easy; coughs for some time before the sputa come up; to-day some of the sputa are stained with blood; complaints of the dyspnoea.

Tinct. iodine to be applied over anterior region of chest.
9th. Patient has continued the medicine regularly, and thinks she feels a little stronger; and change in physical signs, except that the cough and expectoration as before heard; perspiration profuse.

11th. Tongue clean, appetite improved; says she feels stronger, and principally as compared with her former state of hands and feet, which were cold and numb. 14th. The profuse perspiration has continued, and has been attended with some improvement in the cough, but the dyspnoea remains the same.

* Dublin Medical Press.

feeling of oppression of which she complained so much previously; she feels stronger likewise.

18th. No pain in side; cough and expectoration diminished; sleeps better; perspirations continue; sibilant and sonorous râles are heard to-day over greater part of right side of chest in front.

21st. Has had diarrhœa for the last two days, and the perspiration has ceased; appetite diminished; complains of a disagreeable bitter taste; little dyspnœa now; says "she feels much lighter in herself."

25th. Diarrhœa has quite subsided; she says she feels better than she had for a long time previous to her admission; has lost the disagreeable taste in mouth, and does not suffer at all now from the burning heat in the palms of the hands and soles of feet. Physical signs as before; loud gargouillement below each clavicle.

28th. Tongue clean; appetite improved; cough less frequent; expectoration diminished and less yellow; no blood in it; perspirations have ceased for last two nights; she says she feels as if little was the matter with her. Sibilous and sonorous râles are heard over the greater part of the front of the chest to the right of sternum; loud gargouillement on the left side.

February 4th. A lotion of tartar emetic, gr. x. to the ounce, has been rubbed upon the chest, and has brought out some small pimples; perspires at night; no diarrhœa; pulse 104, small; feels stronger. Has continued the naphtha since.

11th. The physical signs continue as before, and the patient considered herself sufficiently well to leave and to return to the country.

CASE II. — Catherine M'Donnell, ætat. 28, dark hair, eyes and complexion, admitted February 28, 1845. She suffers principally from cough, dyspnœa, and hoarseness; expectoration purulent and viscid; emaciation; no diarrhœa or night perspirations; says the menstrual secretion has been regular.

On examination, the chest is much emaciated, and flattened below the clavicles; gargouillement is heard with both inspiration and expiration below left clavicle; upon the right side the respiration is tracheal immediately below the clavicle, and the expiration is lengthened; below this point gargouillement is audible, and has the same character as upon the left side.

She was directed to take ten drops of naphtha, in an ounce of the infusum lini, comp. of the pharmacopœia, three times a day. Counter-

irritation, by means of the tincture of iodine, to the anterior regions of the chest.

March 15th. No alteration in the general or physical signs; within the last few nights she has been labouring under a mild form of delirium, of which she is conscious herself.

25th. The patient complains more of the cough than of any other symptom; she has continued to take the naphtha regularly, but without any apparent benefit; she is more emaciated and weaker. The delirium continues every night, and the patient is not conscious of it herself now; she is rational during the day.

26th. The patient is exceedingly weak, and apparently dying. She died during the night.

Post-mortem appearances.—Apices of both lungs adherent above and posteriorly; no adhesions anteriorly. Anterior surface of both lungs presenting much healthy texture. Near the apex of the right lung two cavities of considerable size—one empty—the other full of pus; the pulmonary tissue about them much consolidated. In the apex of the left lung a large cavity containing pus. Heart not diminished in size, larger than the closed hand of the subject, and containing the ordinary quantity of fat, although every other part, including the omentum, was entirely destitute of fat. Liver enlarged, extending lower down and more to the left side than natural; its texture pale.

CASE III. — Margaret Kennedy, ætat. 22, unmarried, fair complexion, light hair, eyes blue, admitted January 3, 1845; none of her family have died of phthisis; two years ago was attacked with cough and hemoptysis, which subsided. Present illness of six months' duration; she suffers from cough, expectoration, debility, and pain in left side of chest; the night perspirations are profuse, and she has lost much flesh; the tongue is white; the appetite bad; she is chilly during the day, and perspires much at night; menstrual secretion scanty for the last five months; pulse 130 in the recumbent posture; expectoration not copious; sputa yellow and viscid; bowels regular; no diarrhœa at any time.

On examination, there is flat both clavicles; percussion at much pain; sounds of heart both clavicles; below the gargouillement is heard; but respiration is bronchial.

January 4th. R. Naphthæ,
Tinct. aur.
Mist. camp.
Fiat haustus ter in
Croton oil liniment to be rubbed

January 7th. Patient coughed a great deal during the night; expectoration streaked with blood; does not think herself so well to-day.

9th. Complains principally now of pain in left side, which is increased by coughing; expectoration somewhat less; perspiration at night copious.

A blister to the left side was directed, and a mixture, containing aqua lauro cerasi, was substituted for the naphtha.

16th. Patient says she is much better; her appetite has improved, and she feels a little stronger; the pain in the left side has been removed in a great measure; the cough and expectoration are both diminished; during the last two days she had resumed the use of the naphtha.

21st. She still perspires at night, and is chilly during the day; the tongue is cleaner; menses have not appeared, and there has been slight hemoptysis on two occasions. The sounds of the heart are very loud under the right clavicle; the impulse of the large vessels can be also felt in the same place.

January 25th. Has been suffering for the last day or two from severe pain in the umbilical region like colic; this was apparently produced by the naphtha, which has been discontinued in consequence. She has coughed a good deal, and there is a little blood in the expectoration; perspirations continue to be profuse; physical signs as before. The tincture of iodine has been applied as a counter-irritant to the whole front of the chest.

February 4th. Since the last report the patient has had diarrhoea for a few days, which has been now checked. A solution of tartar emetic, in the proportion of ten grains to the ounce of distilled water, has been rubbed over the chest, which has brought out a few pimples. The cough is still very troublesome.

11th. The naphtha was recommenced to-day, and two days afterwards the patient left the hospital, considering herself improved. About a month subsequently she sank under the disease.

CASE IV.—Thomas Brown, a compositor, *ætat.* 20, admitted March 11th, 1845; dark hair, eyes, and complexion; none of his family have died of phthisis. He states that he has had a cough only for the last four months, but it was not severe until within the last two months; six weeks ago, he expectorated a small quantity of blood.

He is much emaciated, and has a sallow unhealthy look; he coughs a great deal,

particularly at night; expectoration thick, yellow, and viscid; had night perspirations previous to his admission, which have ceased now; bowels rather too free. Percussion gives a dull sound below both clavicles, and he complains of pain from mediate percussion under the right; at this point gargouillement is heard on auscultation; on the other side, gargouillement is also audible, but not in so intense a degree.

He was directed to take ten drops of naphtha in an ounce of the infusum lini, comp. three times a day. Counter-irritation to the anterior surface of the chest, by means of the tincture of iodine, made of double strength.

March 26th. The patient has taken the naphtha regularly since the 12th, but without any apparent benefit; he is weak; his appetite is worse; he coughs more, and the expectoration preserves the same characters. Last night slight delirium set in; on questioning him, he stated that he was aware of this himself; he thought his friends had come to visit him, and wanted to get up and dress himself.

April 6th. The patient died to-day; he had been constantly delirious for the last few days, though, when spoken to, he answered rationally enough.

CASE V.—James Kane, a house-smith, *ætat.* 22, applied at the dispensary of the hospital December 21, 1844. He is tall and thin; complexion pale; none of his family have died of phthisis; his father is alive; his mother, he states, died of cancer of the breast. States that he was a hard drinker for two years, but has been a teetotaler for the last nine months. He had been always perfectly healthy until about six months ago, when, after exposure to wet and cold, he was attacked with hemoptysis, cough, chilliness, and pain in the side; he says at this time he expectorated nearly half a gallon of blood. Some time after this he went to the country, where he remained for three months, and left it about five weeks since, nearly free from cough and expectoration, and having gained flesh and strength. On a fresh exposure to cold he had a return of all the symptoms. The cough is the most troublesome; the expectoration is yellow; he complains of hoarseness; perspires sometimes at night, and is losing flesh.

On examination, the respiratory murmur is feeble upon both sides under the clavicles; a moist crepitus is heard in the same situation when the patient makes a full inspiration. The chest is flattened below the clavicles, and does not expand on a full

inspiration. He can lie equally well on both sides.

Tartar emetic ointment, \mathfrak{z} i. to \mathfrak{z} i. was directed to be rubbed upon the chest, and ten drops of naphtha in half an ounce of the infus. lini. c. to be taken three times a day.

December 24th. A large crop of pustules has come out, which are flattened in centre; he rubbed the ointment only three times.

He says the cough is much better and the expectoration more easy.

Ordered; to continue medicine.

31st. He thinks himself that he is much improved. He complains most now of the cough, which, however, he states to be more easy, and the expectoration to be free. He does not object to the taste of the naphtha. He did not attend the hospital subsequent to this date.

CASE VI. — Catharine Callaghan, ætat. 22, unmarried, dark eyes and hair, admitted into hospital November 28th, 1844. She has always lived in Dublin, and has always enjoyed good health until within the last five or six months. She is now suffering from cough and hemoptysis.

About five months ago she had an attack of hemoptysis, without any exciting cause to which she could trace it, and she expectorated as much as a breakfastcupful of blood at the time; since then she has had a cough, which, at first, was trifling and short, increased in frequency, and became harder, but has only been severe between two and three months. She remained free from the hemoptysis until within the last few days, when she had a second attack as severe as the former; she complains much of the cough, which is very harassing, and of a feeling of tightness in the chest; she has lost flesh, but not to any great extent, and she states that the menstrual secretion is normal.

On examination, the chest is somewhat emaciated; on percussion below the left clavicle, a dull sound is elicited; and on auscultation at this place, a small crepitus, resembling that of softening tubercle, is audible over a surface nearly as large as the palm of the hand. The action of the heart is exceedingly rapid, and is heard loudly under the left clavicle.

The patient was bled, and took the acetate of lead with opium, in small doses, for two days, when the hemoptysis subsided.

Ten drops of naphtha, in an ounce and a half of the infusum lini. comp., was directed to be taken three times a day.

December 3d.] There has been no re-

turn of the hemoptysis, but the cough is very severe, and keeps the patient awake at night. The crepitus under the left clavicle is no longer to be heard, but the impulse of the heart continues to be strong and its sounds to be loud.

6th. The naphtha has been omitted for some days, as she thinks that it checked the expectoration, which has been more free since. She coughs a great deal, but there has been no return of hemoptysis. The action of the heart is very rapid, and its sounds are very loud. The pulse is 140, both in the erect and sitting posture.

9th. Cough exceedingly troublesome and hard; expectoration scanty; she complains much of tightness of the chest. A very slight crepitus is just audible at the end of inspiration below the left clavicle.

A mixture, containing tartar emetic and nitrate of potash, was directed.

17th. The tartar emetic mixture made her so sick that she begged it might be discontinued. She has been taking the naphtha again for the last few days in the dose of ten drops three times a day; the cough is somewhat softer, but the taste of the naphtha makes her sick; no crepitus is to be detected now upon the left side of the chest; pulse 128 in sitting posture.

The naphtha was discontinued at her own request, and she left the hospital somewhat improved, shortly afterwards.

Remarks. — The naphtha employed in the foregoing cases was procured at the Apothecaries' Hall; the dose never exceeded ten drops three times a day. Most of the patients complained of its nauseous taste; in one it produced symptoms resembling colic, and in a few instances I have been obliged to discontinue its use, owing to its causing vomiting. In all the cases counter-irritation externally was combined with the internal administration of the remedy.

In none of the foregoing cases did the naphtha produce the slightest improvement in the physical signs, and in none in which I have exhibited it have I observed the signs of amelioration which are stated to have followed its employment of others.

Among the gratification was general, but this was a case, and increase perspiration influenced say th

any material change while the patients were under its influence.

Of the foregoing cases, three died, and I have been able to learn nothing subsequently respecting the three others. In two of the latter the improvement in the general signs, while under treatment, was considerable, but not at all more rapid or more considerable than I have frequently witnessed under other modes of treatment, where the patient exchanged an unhealthy residence, or a laborious employment, for the repose and comforts of an hospital; or where he submitted himself to the hygienic and therapeutic treatment which his case required.

The naphtha was exhibited in a larger number of cases than are here given, but these present a fair average of the results; and upon the whole, my experience of this medicine in phthisis does not lead me to say much in its favour; as an auxiliary to other means it may be occasionally useful, but as a specific in phthisis, it has no note title to the term than many other medicines which have preceded it. — *Ibid.*

SYPHILIS TRANSMITTED FROM FATHER TO CHILD.

Constitutional syphilis, in the father, the cause of repeated abortions, and subsequent infection of the fœtus, born at the full period, the mother remaining wholly free from disease; with observations.

By W. ACTON, Surgeon to the Islington Dispensary.

The author remarks, that the Medico-Chirurgical Transactions, as well as Treatises on Venereal Disease, furnish numerous instances of syphilis in infants, dependant on previous contamination of the mother alone, or of both parents; but surgeons and accoucheurs have hesitated in believing that the male can infect the embryo without infecting the female. Three cases are brought forward in order to elucidate the point in question.

M. H., nine weeks old, was brought to the author by its mother on account of an eruption, chiefly papular, over the whole body. The voice was hoarse, and there was slight discharge from the nose; the palms of the hands presented a scaly copper-coloured eruption. Emaciation was less than is usually observed in children labouring under syphilis, but that peculiar earthy hue of the skin generally was very evident. The mother states, she married four years ago, became soon after pregnant, and at the full time produced a dead child, the skin of which was dark coloured, and peeled off on the slightest touch. During the following year she mis-

carried. On the occurrence of the third pregnancy, the child, the present patient, was born at the full period perfectly healthy. During the third week spots were observed on the genital organs, and they have been increasing up to the present time. No symptom, either of primary or secondary disease, could be discovered in the mother. The father about four years ago contracted chancres, was salivated, and secondary symptoms followed. He again took mercury, and, believing himself cured, married, and denies having had any primary symptoms since, but he has occasionally seen white spots on his mouth and tongue — has not remarked any spots on his body. There is nothing at present in his appearance to bespeak syphilis, nor can any recent marks of infection be discovered. The author directed an ointment, composed of unguent. hydrarg. nitrat. and spermaceti, to be applied to the affected skin, and a powder containing two grains of hydrarg. c. creta, to be given at night. Within a month the child was free from disease, and had regained its healthy appearance. The author gives an abridged account of two other cases of secondary syphilis in men, whose wives were free from all disease, but had miscarried. He remarks that these cases furnish three instances of males affected with constitutional syphilis who marry and yet fail to communicate any disease to their wives, thus far corroborating our experiments, that secondary symptoms are not inoculable or capable of transmission from an infected adult to an healthy female. They moreover make it probable that a male thus infected may so far exercise a morbid influence on the embryo, the result of cohabitation between him and a healthy female, as to cause its premature expulsion, or disease it so much, that soon after birth secondary symptoms will appear. The first case further induces the belief, that though syphilis may produce miscarriage, a healthy child can be subsequently born, although no mercury be given to either parent. If it be true that the father can infect the fœtus without contaminating the mother, it justifies the surgeon in sparing her a course of mercury, and may induce him to treat the child with some mild mercurial without fear of its being reinfecting by the milk of the mother; thus offering additional evidence that the mother does not participate in the disease which the child inherits from the father.

Dr. King said, that when a child was born with syphilis, Dr. Hamilton of Edinburgh, used to recommend that both parents should be placed under the influence of mercury. He related some cases to show that a child might be born with syphilis, although the mother might be uncontaminated. He regarded the plan of treating children so affected by placing a flannel belt round their body smeared with mercurial ointment, and covered with oil silk, as recommended by Sir B. Brodie, as an excellent mode of treatment.

Dr. Johnson did not believe the father could give constitutional disease to his off-spring, unless the mother were affected. "If the local dis-

case were produced in the mother, it would explain the occurrence of disease in the child.

Mr. Simon mentioned several cases detailed in the German journals, to show that, in all cases where the child was born with syphilis, both parents had laboured under the primary disease, although in the woman it might not have been observed.

Mr. Arnott had seen several cases of children born with syphilis, the mothers of which had never suffered from the primary affection. He therefore believed that the father might contaminate his offspring without affecting the mother. He had had no experience in the treatment of parents under these circumstances, but was inclined to adopt the practice of Mr. Colles of Dublin, of placing both parents under the influence of mercury.

Dr. W. Merriman related some cases to show that the mother was not necessarily contaminated when the offspring was born with syphilis.

Mr. Wade had been long convinced that the father might communicate syphilis to his child, whilst the mother remained unaffected.

After a few words from Sir G. Lefevre,

Mr. Acton rose to reply, and expressed his regret that the paper had been read so late in the evening, that he had not time to reply to all the observations made. He should not have introduced his paper to the society, had he not believed that the cases detailed were more complete than any others on record, as containing a correct description of the disease in the child, the symptoms in the father, and the negative evidence furnished by examination of the mother. His object was to show the real influence of syphilis in inducing abortion, not, as some supposed, an indefinite time after its cure, but to point out the possibility that a man can contaminate the fetus during the period he himself is labouring under secondary symptoms. He could furnish abundance of cases from books founded on insufficient evidence. His object was to take the opinion of practical surgeons upon the question. Another practical indication he had pointed out in the paper, if his views were correct, was, that in order that healthy children should be born, it was not necessary to place the mother under the influence of mercury—a proceeding always injurious to the child, by deteriorating the milk. He attributed the great mortality among syphilitic children to the administration of mercurials to the nursing mother. He preferred always administering it to the infant, however young, as it usually produced the best effects, as in the case detailed, particularly if the mild preparations were used.—*Medical Gazette*.

ON THE INFLUENCE OF MANIPULATING TOBACCO, ON PHTHISIS, RHEUMATISM, AND AGUE.

By Dr. RUFF, of Strasbourg.

(*Academy of Medicine*.—May 19.)

Dr. Ruff addressed a letter to the

Academy on the foregoing subject, in consequence of M. Melier's recent report to the Academy on the sanatory condition of tobacco manufacturers.

M. Melier's report, Dr. Ruff says, induces me to address a few short remarks to the Academy, which are the result of fourteen years observation of the operatives in the tobacco factory of Strasbourg,—a manufactory which presents the most favourable opportunity for clinical observation, as almost all the work people enter it in early youth, pass their entire life in manipulating tobacco, and apply exclusively to me for medical advice.

M. Melier specially mentions three diseases,—phthisis, rheumatism, and ague,—which are all of very frequent occurrence in Strasbourg. I first, in 1836, and subsequently in 1842, drew the attention of physicians attached to tobacco factories to phthisis, affirming that *phthisis* is a rare disease amongst workmen habituated from infancy to the manipulation of tobacco: and furthermore, that phthisis runs a slower course than usual in persons who enter such factories with the germ of the disease. I trust that I shall be able to prove this assertion by publishing an accurate account of the phthical persons who have worked for many years in the Strasbourg tobacco factory, of others who entered the factory two years since, and who were ascertained by several physicians to unquestionably labour under phthisis; and finally, by a comparison of the rate of progress of phthisis in different members of the same families, some of whom were employed in the tobacco factory, and others not. In the meantime, I protest against M. Melier's conclusion—that, being employed in the manufacture of tobacco, neither preserves from phthisis nor retards the progress of that disease.

As to rheumatism, I have not found that the emanations of tobacco are efficacious in that affection; on the contrary, it is of very frequent occurrence nearly one-fifth of the patients f

Strasbourg tobacco factory being affected with this disease. The liability of the workmen to rheumatism arises from their carelessness in exposing themselves incautiously to sudden changes of temperature. Among 271 operatives (189 males and 82 females) employed in the factory, there were in the years

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| 1842, 38 cases of rheumatism amongst 192 pat's | |
| 1843, 41 do. do. do. 191 do. | |
| 1844, 31 do. do. do. 138 do. | |

The assertion contained in M. Meller's report, that manipulating tobacco seems to exert a prophylactic influence against ague, is by no means confirmed by my experience. During the last three years, I had among the 271 operatives, four cases of ague in 1842, seventeen in 1843, and one only in 1844; and on comparing those numbers with the number of cases of ague that occurred in the families of the operatives, and amongst the population at large, the proportional results are exactly the same.—*Dublin Med. Press.*

TREATMENT OF POISONING BY PRUSSIC ACID.

Good Effects of Cold Affusion.—Recovery after large doses.

SIR,—As the following statement appears interesting at the present moment, inasmuch as it shows, I think, the greatest length of time the human subject has been observed to be under the influence of hydrocyanic acid without producing death, I shall feel obliged by its insertion in the Gazette.

I am, sir,
Your obedient servant,
THOMAS TAYLOR.

H. G.—, aged 59, a healthy agricultural labourer, rather stout made, applied to be relieved from ascarides, and was furnished with a draught containing *Ol. Ricini*, 3vj., *Spt. Tereb.* 3ij., which he was directed to take early in the morning. His wife, at the same time, was taking prussic acid of Scheele's strength for a dyspeptic affection. The wife's bottle contained sixty minims of Scheele's acid, diluted with three ounces of distilled water, of which she took one

tea-spoonful in toast and water three times a day. She had taken, as nearly as could be ascertained, about one fourth part of the medicine, or six drachms, containing fifteen minims of the acid: there remained in the bottle eighteen drachms, containing forty-five drops of the acid, the whole of which was swallowed by the husband instead of the draught prescribed for him: he had no sooner taken it than he was seized with a violent constriction of the diaphragm, with a sense of suffocation. He walked to the outer door of the house, about twelve or fourteen paces, when he fell insensible, and, in his fall, broke a large pan, which was full of water, the contents of which pretty well saturated his clothes, and this, no doubt, had a beneficial influence upon him. The accident took place about half past seven o'clock in the morning, and it was not until twenty minutes after eleven, or nearly four hours after taking the acid, that he showed symptoms of returning animation. At this time he was seen by Mr. Currie, a gentleman at present assisting me, who, on making inquiries as to what he had taken, discovered the mistake, when, by the application of cold water and ammonia, he was soon restored. When coming to himself he vomited freely, but no odour of the acid was perceptible in what he threw off his stomach! The next day he was suffering from the effects of hot bricks, and hot bottles of water, which had been applied to him with too liberal a hand during the state of insensibility before Mr. Currie saw him, and which is now his only ailment.

The acid which was here taken was supposed in the first place to have been Scheele's. On analysis, however, it was found that fifty drops gave only five grains of well-washed and dried cyanide of silver (equal to one grain of anhydrous prussic acid). The patient, therefore, swallowed a dose equal to that taken in Mr. Hick's case, elsewhere reported (vol. xxxv., p. 893), *i. e.*, nine-tenths of a grain of anhydrous acid, which shows that this dose may be taken without always proving fatal, although in this instance the patient, a stout healthy man, had a narrow escape of his life, for he only began to recover after hours. This case shows that in reporting a case of poisoning by prussic acid, it is always necessary, if possible, to determine the exact strength of the acid from part of the poison taken; for the acid here used was reputed to be Scheele's, when it turned out stronger than that of the Pharmacopoeia proves that a person, after having

ed such a dose, may have the power of running a considerable distance; and further, that the contents of the stomach, in the short space of *four hours*, after nine-tenths of a grain have been swallowed, may leave no smell of prussic acid. This case is in many respects interesting and important.]

We add to this two other cases for the purpose of showing the beneficial effects of cold affusion.

Case of Poisoning by Hydrocyanic Acid.

Mr. Harthill has related a case of recovery from poisoning by hydrocyanic acid, which recently occurred under his care. He was summoned to a soldier, aged 23, about 9 o'clock in the evening of the 15th of January, and was informed that he had taken poison. He found him insensible, with convulsions. The mouth having been forced open, emetics of mustard and sulphate of zinc were exhibited. Mr. Harthill sent to Mr. Law, at the Infirmary, who arrived shortly with a stomach pump, which was used for injecting the stomach, for the tube could not be introduced far enough to withdraw any fluid; a stream of cold water was applied to the spine, and turpentine enemata administered. The effects of the cold water were instantaneous, feeling and consciousness becoming immediately evident. Powerful stimuli, brandy and ammonia, were administered; sinapisms to the thighs, and in about four hours, eight minims of tincture of opium were given. The next day he was much recovered, and has since been sent to head quarters. On making search, an ounce phial was found, smelling very strongly of hydrocyanic acid—labelled, but with the name of the druggist cut off, apparently by design, and no account could be obtained as to the place where it could be procured. (*Prov. Med. Jour.*, Mar. 1845.) The quantity taken is not stated.

Poisoning by Hydrocyanic Acid.

The following case was originally reported by Dr. Banks, of Louth, in the Edinburgh Med. and Surgical Journal.* We are induced to extract it in an abridged form, as the treatment appears to have been quite successful in an almost hopeless case.

A girl, æt 19, while labouring under dyspepsia, took hydrocyanic acid as a medicine. In order that she might have it in as cheap a form as possible, an ounce and a half phial was sent, containing forty drops of the acid in the whole mixture, of which she was directed to take a tea-spoonful in

camomile tea. She did not attend to the directions, and carelessly poured out into a cup rather more than three-fourths of the whole mixture (therefore *thirty drops* of acid) into a cup, and drank it off. Immediately after taking it, she exclaimed, "bread! bread!" and in another instant her mother perceived her spring up convulsively from her seat, and quickly ran to her assistance. The mother states that she was then quite senseless; her teeth firmly set, and her eyes staring and fixed. Two medical men arrived in five minutes after the dose was taken. No stimulants could be administered, as she was unable to swallow. The convulsive stage was now passed. The patient was lying on the floor, senseless; the limbs quite flaccid; eyes fixed and glistening; pupils dilated, and wholly insensible; respiration slow and feeble, and the pulse scarcely perceptible, with a cold clammy sweat over the surface. In spite of stimulants being introduced into the stomach by the stomach-pump, there was no amelioration of the symptoms. Cold affusion was then employed. A stream of cold water from a large pitcher held at some distance above was allowed to fall upon the head. In a minute afterwards, the patient began to move. She then became convulsed, and writhed and moaned as if in agony. The respiration became stronger, the pulse fuller. The cold affusion was repeated, when she again cried out as if in great pain, extended the extremities, and passed an involuntary evacuation. The pulse and breathing continued to improve, and there was some appearance of returning consciousness. She was placed in a warm bed; reaction followed, and in a few hours she appeared quite sensible and collected, but had no recollection of anything that had transpired. She was ill and weak for a few days, and complained of weight, pain, and heat of the head, with some gastric uneasiness, but which were soon relieved. She perfectly recovered.

[This case is highly interesting as showing the good effects of cold affusion. There is reasonable ground to attribute the recovery of this patient to the practice. It is far better than venesection, which can only be prejudicial, where a powerful sedative effect has been produced on the heart. In one important point the case is sadly defective,—the strength of the prussic acid, and the quantity of anhydrous acid taken in the *thirty drops*, are not mentioned. All we are informed of is, that the acid was procured from Garden of Oxford Street. Dr.

* Vol. xlviii, p. 44.

Christison states, that the dose here taken was very nearly a *whole grain* of anhydrous acid (770), but upon what authority does not appear.]

Case of Poisoning by Cherry-laurel Water.

By Dr. HAYN.

The following case, published in Schmidt's *Jahrbücher*, and extracted from the *Chemist*, April, 1845, is chiefly remarkable for the great length of time during which the symptoms were protracted.

A middle-aged man, of a hypochondriacal disposition, found means of procuring aqua laurocerasi, of which he drank *one ounce and a half*; when the symptoms of poisoning appeared, he did not deny having committed the crime. Not until after three hours was paralysis noticed in both the hands and feet; the head hung down, he being unable to raise it; involuntary excretions of feces and urine; the extremities were motionless and cold, but not devoid of sensation; the pulse small, the voice hoarse, but distinct. The full consciousness of the patient was remarkable. He felt pleasure in finding his debility to be on the increase, and notwithstanding the antidotes administered, he calmly expired in the evening. On dissection, the blood was found to be of the peculiar striking dark colour and unctuous condition, but no odour of prussic acid could be perceived! — *Med. Gaz.*

ST. GEORGE'S HOSPITAL.

Complete Absorption of the Lens four years after the operation of Keratonixis.

By HENRY LEE, Esq.

Charles Whale, æt. 23, was admitted a patient into St. George's Hospital, in the summer of the year 1841. He had at that time a cataract in the right eye, which he stated had been produced by a slight blow from a switch some time previously. The lens appeared of a pearl white colour, divided by radii of a greater degree of opacity.

Mr. Babington, under whose care this patient was placed, introduced a needle through the cornea, and lacerated to a slight extent the anterior capsule of the lens. This operation was subsequently repeated, and the opacity gradually and entirely disappeared. A considerable degree of vision was restored, but as the sight of the left eye was unimpaired, the affected eye was subsequently little used. This patient was again admitted into St. George's Hospital upon the 1st of January, 1845, and died of phthisis on the 20th of April following. In examining the eye, which had formerly been the seat of cataract, after death, the

following appearances presented themselves. Immediately behind the iris was a circular layer, of a pale, whitish, semi-transparent colour, and possessing a considerable degree of toughness. This was evidently the remains of the anterior capsule of the lens, and presented in its centre an irregular aperture with puckered edges, about the size of a dilated pupil. The posterior capsule of the lens could not be distinguished. The situation of the lens was occupied by a perfectly transparent fluid, in every respect resembling the aqueous humour of the eye, with which it freely communicated through the aperture in the anterior capsule above described. — *Ibid.*

ANALYSIS OF THE BLOOD IN A CASE OF EPILEPSY AFTER A LONG CONTINUED USE OF THE NITRATE OF SILVER.

By Dr. HELLER.

With remarks on the discoloration of the skin produced by that substance, by the editor.

The patient was a boy, aged 18 years, under the care of Dr. Bittner. He had taken for a period of five weeks, the nitrate of silver in a dose gradually raised from one to three grains daily, without the slightest appearance of discoloration of the skin. Dr. Heller wished to examine the blood, but in spite of the continued use of the nitrate, the skin did not become discoloured; although such a result has been frequently observed, and Wattmann found that where the change of colour was produced, it did not again disappear even when the use of the nitrate of silver had been long discontinued. In the present case, the epileptic paroxysms came on daily. The individual was addicted to onanism.

The blood for the purpose of analysis was obtained by cupping. It was of a bright red colour, and had the usual odour and taste. Coagulation had completely taken place into clot and serum. The serum was of a bright red colour, and clear; it had an alkaline reaction. The clot was of a bright red, without any sign of buffy coat, and presented its usual normal characters.

The quantity of blood taken for

analysis amounted to 17·07 grammes* (263·39 grs.). The serum weighed 9 grammes (138·87 grains), and the clot 8·07 grammes (124·52 grains). These quantities give for 1000 parts of blood :—

| | |
|--------|--------|
| Serum, | 527·24 |
| Clot, | 472·76 |

Further, 1000 parts of blood yielded :

| | |
|-----------------------------|-------|
| Water, | 797·2 |
| Solid residue (3·01 Fibrin) | 202·8 |
| | 1000. |

Process for detecting silver.

The dried residue of the serum and crassamentum, amounting to rather more than 3 grammes (46·29 grains) was incinerated in a platinum crucible, until a fixed ash was obtained. This was next digested in warm nitric acid considerably diluted with water. The nitric acid was expelled by heat, and the clear but still slightly acid liquid was then tested for silver, by means of the chloride of sodium and other delicate reagents. *Not a trace of the metal could be discovered.*

On two subsequent occasions, blood taken by cupping from the same patient, was again examined, but with the same negative results, from which it is reasonable to infer, that the silver in this case had really not entered into, or combined with the blood,—a fact established on the one hand by the medicine, even under the long continued use of large doses, producing no effect on the skin of the patient, and on the other the certainty that had the metal existed in the blood, even in an imponderable quantity, it would assuredly have been detected by the chemical process employed."—*Heller's Archiv. fur Physiologische und Pathologische Chemie und Mikroskopie*, 1884, i. 9.

Remarks.—We have inserted this case from the interest now excited by the employment of the oxide of silver, instead of the nitrate, in the treatment of certain diseases. It was supposed among other benefits, that it was not exposed to the objection of producing cutaneous discoloration; but it would appear that this is not consistent with the experience of the practitioner who first recommended its employment in this country, and to whom Sir James Eyre, in his recent work, gives full credit for the introduction of the remedy.† Heller's case shows that nitrate of silver may be used for some weeks in large doses without producing cutaneous discoloration. No silver could be detected in the blood, and it is probable that Heller's inference was correct, i. e., that not a trace of the metal was present in that liquid; but we think there are some objections to the experi-

ments on which that inference is based. In the first place, the quantity of blood taken was extremely small (17·07 grammes). In the experiments of M. de Kramer, of Milan,* from two to three hundred grammes of blood at least were employed, even in cases in which the nitrate of silver had been administered in large doses as a poison to animals. The result was, that the metal was found both in arterial and venous blood. Another objection is, that the process of analysis used by Heller was defective. The large proportion of chlorides contained in the blood, would convert the silver to a fixed chloride insoluble in nitric acid. This acid, therefore, would not be likely to take up any silver from the ash. De Kramer's plan consisted in heating the ash to a high temperature with potash, lixiviating and washing the residue, and then digesting it in nitric acid, in order to dissolve any particles of metallic silver. In this solution, he easily detected silver. We have not met with any case where silver was detected in the blood of a person taking the nitrate in small doses as a medicine; but it would probably be found by De Kramer's process. That the salt does in some form enter into this liquid, is clear from the cutaneous discoloration occasionally produced. The chloride of silver, given in strong doses to animals, has also been found to enter the blood, and we think further inquiry would show that the oxide is probably not exempt from this serious objection to the employment of preparations of silver.

With respect to the colour produced in the skin by the use of these preparations, Dr. Bielt, like many other physicians, has observed, that it sometimes appears only a long time after commencing with the use of the nitrate. According to Dr. Johnson, it requires at least three months' administration of the nitrate as a medicine in order that the complexion should be affected, and that when taken for periods shorter than this, there has been no discoloration. The results, however, must materially depend upon the quantity of nitrate taken, and the rapidity of absorption. From a blue, the colour passes to a bronze hue, especially in those discoloured parts which are exposed to the sun, as the face and hands. It gradually deepens, so as to become almost black. The conjunctivæ acquire a livid hue, and the same colour has been remarked in the skin of the lips. In some instances, the discoloration has slightly diminished after a time, but no case is known in which it has wholly disappeared. Dr. Bielt saw at Geneva, two persons in whom the colour had remained unchanged for a period of twenty years. It is singular, that while the hair does not become discoloured, the nails have been observed to acquire a bluish tinge. Even old cicatrices undergo this change, but in a cicatrix formed subsequently to the discoloration, the skin has been observed to remain white. The cause of this singular

* The gramme is equal to 15·43 grains English.

† Mr. Lane's communication, p. 112.

* *Annales D'Hygiene Publique et de Médecine Legale*, xxix., 429.

change is but little understood. It is probably due to a combination in the first instance of the oxide or salt of silver with the superficial layers of the true skin; for the cuticle has been frequently removed by blisters without diminishing the intensity of the colour; and in the case supposed, light would act upon the metal as it does in any other instance, where one of its salts is in contact with organic matter, *i. e.*, reduce it to the state of suboxide or metal, which would then form an intimate combination with the organic tissues. One of the most powerful solvents of silver in this condition, is the cyanide of potassium. A suggestion has been made, that a solution of this salt might be used for removing the colour, but its poisonous properties are so great, that it could hardly be employed with safety under any circumstances, even supposing it to act efficaciously.

TEETH CUTTING MACHINE.

A description of the Patent Dentifactor, invented

By Mr. TOMES, Surgeon-Dentist to the Middlesex Hospital.

The author, in his description, divides artificial teeth into two parts:—first, that part which lies upon the surface of the gums and palate, and which he calls the base of the teeth; and secondly, the teeth themselves, which are fixed to the base. To make the base perfect, seems to be the greatest difficulty in dental art, since it is at all times difficult to make by hand irregular surfaces to fit each other, especially when the surface to be fitted is as convoluted as that of the gums and palate. Nevertheless, the whole value of artificial teeth depends upon their fitting with great accuracy to that surface of the mouth upon which they are destined to rest, and by which the pressure of mastication is to be borne. This difficulty is, however, completely overcome by the dentifactor, which is capable of copying, with the greatest possible fidelity, any surface placed before it. The usual method of fitting the base is as follows:—A correct cast in plaster of Paris, being obtained, its surface is covered with red paint. The block of Hippopotamus tooth, now known by the name of dentine, is placed upon the cast, in the required position; by the contact, certain parts of the dentine will have received the paint; these are cut away, and the contact is repeated; the coloured points are again cut away; and this is done again and again, till the dentine is found to fit the surface of the plaster cast. This process takes a considerable length of time and good workmanship, and even then, perfect accuracy cannot be ensured. If gold be used for the base, dentine is fitted upon its surface for the grinding teeth; and here, as in the former case, great accuracy is necessary, otherwise food will work between the gold and

dentine, and there become offensive. Up to this time, dentists possessed no means of ascertaining whether the cast of the mouth to which they were about to work, was correct or not. This defect is now remedied in the system proposed by Mr. TOMEs. Having obtained the cast of the mouth in the usual manner, he presses upon it, when softened by heat, a peculiar kind of hard wax. This, when cool, is removed, and presents a perfect counterpart of the cast. The composition is then cut into the shape of the intended teeth, and is placed in the mouth of the patient, to which it will be found to fit perfectly, supposing the cast on which it has been formed be correct; but on the other hand, should it not fit, then attention will be drawn to the error in the cast, and a new one will be taken. So that this moulding wax furnishes a ready means of testing the accuracy of the plaster cast before the teeth are commenced.

Should, however, the composition model fit the mouth perfectly, it is placed in the machine, with a block of dentine by its side; and by the action of a cutting drill, a copy is speedily produced, with such accuracy of detail that were the copy and the original in a similar material, it would be difficult to distinguish the one from the other.

The frame-work of the machine is of cast iron, and consists of an horizontal and a perpendicular portion, which join each at a right angle. Upon the vertical part are two slides, which move a plate of iron in two directions in the vertical plane; namely, horizontally and vertically. Upon the plate so moved are fixed the composition model of the artificial teeth, and the block of dentine; the two must, therefore, partake of absolutely the same motion. Upon the horizontal plane of the machine is a third slide, which moves horizontally also, but at right angles to the two motions of the vertical slides. A tracer and drill are permanently fixed upon this third slide; the tracer being placed opposite the composite model, and the drill before the dentine. The drill being put in motion by a foot wheel, the tracer, by means of the slides (which are moved by hand screws), is made to pass over the surface of the model, while the revolving drill being constrained to follow a similar course, cuts in the dentine a fac-simile to the model over which the tracer has passed.

It is essential that the drill and tracer be alike in size and shape, and that the tracer be of such size and shape that can follow any part of the surface of the model. The machine not only works with great accuracy, but also with rapidity; it will therefore supersede hand labour in this branch of art, surpassing the latter both in the time of producing and in the quality of the production. It is probable that the instrument will be found available for supplying other surgical losses than those sustained in the organs of mastication and articulation, for which alone it has at present been applied.

* Mr. Lane's Communication, p. 112.

NEW PROOF OF THE FUNCTIONS OF THE ANTERIOR COLUMNS OF THE SPINAL CORD.

"An interesting point, which the researches of Longet and Matteucci have elucidated, is the function of the anterior columns of the spinal cord, which are shown to possess an exclusively motor function—a fact which had been ascertained by physiologists by other modes of investigation; but which is thus singularly confirmed by the influence of electrical currents. Their experiments on the anterior white fasciculi of the spinal marrow, made on dogs, rabbits, frogs, and the common ringed snake (*Coluber Natrix*), have demonstrated that these fasciculi are affected by the *direct* and *inverse* currents in the manner of the anterior roots: a new proof of the exclusively motor function of the anterior white part of the cord."—*Med. Chir. Rev.*

ACADEMY OF SCIENCES—PARIS, 1845.

M. BONJEAN ON THE POISONOUS EFFECTS OF THE SECALE CORNUTUM.

The ergot of rye, taken as an alimentary substance, may give rise to two kinds of symptoms: to convulsive phenomena or to gangrené. These series of symptoms may present themselves singly or combined. A year ago, M. Bonjean attended a family in the vicinity of Chamberry, all the members of which were attacked with the convulsive form; he has lately observed, in the same neighbourhood, a case in which the gangrenous form alone prevailed. A family composed of eight individuals—the father, mother, and six children, between the ages of two and seventeen—ate, during three weeks, bread containing one and a half per cent. of ergot. The father and mother merely experienced lassitude in the limbs; the three eldest children presented no abnormal symptom. Two of the youngest only were attacked with gangrené: one, a boy, ten years of age, after eating the bread during fifteen days, felt a severe pain from the left groin to the calf of the leg. The feet and legs became tumefied, covered with phlyctenæ, and the gangrené, appearing at the inferior third of the legs, descended towards the feet, and ascended to the upper part of the legs, where it became limited. The other, aged twenty-eight months, was attacked in the same way, but on one leg only. There were no premonitory symptoms whatever in either case. The two children were admitted into the hospital at Lyons, where the gangrenous limbs were taken off, and they were subsequently quite cured.

DIGESTION OF SACCHARINE AND AMYLACEOUS MATTERS.

M. Mialhe has recently made numerous researches with reference to the physiology of

digestion. The essential basis of the alimentation of animals, he states, is constituted by three distinct groups of bodies: albuminous, fatty, and saccharine matters. The labours of modern chemists have shown that albuminous substances become assimilable through the assistance of the gastric juice, which, by its acid, swells these azotized products, and by its *pepsin* liquefies them, a phenomenon analogous to that of diastasis on amidon. Fatty matter becomes assimilable by the intervention of bile, but with regard to feculaceous and saccharine matter, says M. Mialhe, there is nothing positive known. This lacuna in science he has endeavoured to fill.

The new facts at which M. Mialhe has arrived, tend to show that all hydro-carbonaceous substances can only undergo the phenomenon of assimilation when they have been decomposed by the weak alkaline dissolutions contained in the vital humours; either immediately, as with glucose, dextrine, sugar of milk; or mediately, as with cane sugar and amidon, which have to be first transformed in the economy, the one (cane-sugar) into glucose, the other into dextrine or glucose. As to hydro-carbonaceous substances, which are neither susceptible of fermentation nor of decomposition by weak acids, or alkalies in solution, such as lignite or mannite, they escape, in man, the digestive and assimilating action. But by what chemical action is the amidon transformed into dextrine and glucose? Numerous experiments have proved to M. Mialhe that this transformation is produced by the saliva, through a principle which this humour contains, a principle comparable, in every respect, to *diastasis*. In order to isolate it, human saliva, first filtered, is treated by five or six times its weight of alcohol, alcohol being added until precipitation ceases. The *animal diastasis* is deposited in white flakes. It is gathered on a filter, from which it is taken still moist, and dried in layers on glass, by a current of warm air, at a temperature of from 40 to 50 degrees (centigr.); it is preserved in a well-stoppered bottle. This active principle of the saliva is solid, white, or of a greyish white, amorphous, insoluble in alcohol, soluble in water and weak alcohol. The aqueous solution is insipid, neutral; the sub-acetate of lead does not give rise to a precipitate. Abandoned to itself, it soon becomes acid, and whether or not in contact with the air. This *animal diastasis*, studied comparatively with *diastasis* extracted from germinating barley, presents the same modes of action. It transforms amidon into dextrine and glucose; acting on starch, and elevating the temperature to 70 or 75 degrees, the liquefaction is nearly immediate. One part of this substance suffices to liquefy and convert two thousand parts of fecula. The agents, such as creosote, tannin, the powerful acids, the salts of mercury, of copper, of silver, &c., which destroy the properties of *diastasis*, act in the same manner with respect to the active principle of saliva. At an equal weight they both liquefy and transform the same quan-

BULLETIN OF

tity of hydrated amidon. It appears, even, that the active principle of germinated barley is self-energetic as that of saliva, which is owing to the greater facility of obtaining the latter in a pure state. Finally, as a last resemblance, the animal diastasis existing in the saliva of man rarely exceeds two thousandths, and this is exactly the proportion of the diastasis contained in germinated barley.

THE FUNCTIONS OF

MM. BOUILLON

THE FUNCTIONS OF THE PANCREAS.

their researches on the chemical phenomena of digestion, have recently ascertained that the pancreatic juice possesses the same properties as the saliva. This liquid, taken from the pancreas of strong farm-yard fowls, was transparent and viscous, presenting a slightly alkaline reaction. Mixed with amidon jelly, it liquefied it and transformed it into dextrine and glucose. By adding alcohol, it formed a white deposit, which also acted on the jelly of fecula in the same manner as diastasis. A temperature of 100° (centig.), or the addition of various substances, such as tannin, the mineral acids, or the metallic salts, destroyed its properties. The pancreas itself, extracted from animals, and carefully separated from the blood by which it passes through it, and from the different vessels which it possesses, in a high degree the property of giving rise to the transformation of starch, tepid, and very consistent, convert it, after a few minutes, into a liquid free from viscosity. Pounded and mixed with water, they give a fluid, from which it is possible to separate, with the assistance of alcohol, a flaky precipitate, endowed with the power of dissolving fecula. Other organs, such as the liver, treated in the same manner, do not give the same results. We may therefore conclude, from these facts, that the principal function of the pancreas is to secrete a liquid able to dissolve feculaceous substances, to allow of their absorption in the intestine by the smaller ramifications of the vena porta, and, consequently, to admit of their utilization by the economy. — *Lancet*.

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A CASE OF PUERPERA PENDING.

A CASE OF PUERPERAL CONVULSIONS DE-
PENDING ON IRRITATION OF THE
BLADDER.
By CHARLES NILES, Esq., Surgeon.

I have recorded the following case, because it appears to me to illustrate some important points in the pathology of puerperal convulsions, a disease of great interest, from its dangerous nature, and particularly as, of late years, it seems to have much increased in frequency.

Susan C., aged 20, of spare habit, and nervous temperament, had enjoyed tolerably good health, and was about eight months advanced

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Remarks.—On inquiry, it was ascertained that this patient had suffered, for some weeks previous to the attack, from œdema of the hands and feet, a circumstance occurring in these cases, to which the attention of the profession has lately been called by Dr. Lever, of Guy's Hospital, and other midwifery practitioners, as indicating the presence of albuminuria.

The case also appears to illustrate the pathology of puerperal convulsions, and to confirm in a remarkable manner, the views advanced by Dr. Tyler Smith, in his "Observations on Midwifery," which have appeared in the *Lancet*. The fits would seem to have been caused, or, at all events, kept up, by the continued irritation of the vesical nerves. Such is the conclusion naturally drawn from the facts, that the general treatment, and the evacuation of the uterus, failed to relieve the convulsions, while, after the woman had passed into a very dangerous condition, the discovery of the distended state of the bladder, and the evacuation of this organ, produced immediate and permanent relief. It appears clear that the irritation of the vesical nerves was conveyed to the spinal centre, and reflected upon the motor nerves and the muscular system in the form of convulsions; how, otherwise, can we account for the cessation of the fits, and the speedy return of consciousness, when the local irritation was removed. The case is very similar to that quoted by Dr. Smith from La Motte, in which the same cause excited the fits, and in which the removal of the cause proved equally beneficial.—*Lancet*.

IPECACUANHA, IN EMETIC DOSES, AS A POWERFUL RESTORATIVE IN SOME CASES OF EXHAUSTION AND SINKING.

By JOHN HIGGINBOTTAM, F.R.C.S., Nottingham.

(Read before the Nottingham Medico-Chirurgical Society, May 23, 1845.)

In the year 1814, I was first led to see the extraordinary beneficial effects of ipecacuanha as an emetic, in a female forty years of age, who was in a sinking state, in the last stage of cholera; her countenance was shrunk, extremities cold, cramp in the legs, and other symptoms of approaching dissolution. I had previously attended two similar cases, where I had given opium, brandy, and medicinal cordials, and both patients died. I was induced, in this instance, to give a scruple of ipecacuanha, from having frequently seen the good effects of it in the early stage of the disease. After the lapse of two or three hours, I again visited my patient, fearing I should find her dead, but, to my great pleasure and surprise, so great a change for the better had taken place as to appear almost incredible; the whole of her body was of a natural warmth, the dangerous symptoms had disappeared, and she made no complaint, except that she was very weak. She had no further unfavourable symptom of the disease, and was soon convalescent.

My confidence in the ipecacuanha, as a remedy in such cases, has now been confirmed during the practice of thirty years; the purging, vomiting, and cramp, often entirely cease after the emetic operation of the ipecacuanha, but I have thought it proper to give, in about two or three hours after the emetic, a pill; with a grain of opium and five grains of the blue pill, to allay any remaining irritation of the stomach and intestines, and an aperient, with one scruple of rhubarb and two of the sulphate of potash, to assist the natural action of the bowels, and a simple saline effervescing draught every two or three hours afterwards; weak tea, well-boiled gruel, milk, with sago or arrow-root as nutriment, and diluents.—*Dub. Med. Press.*

UTERINE HÆMORRHAGE.

The next case which attracted my particular observation, was the utility of ipecacuanha in severe uterine hæmorrhage. I attended the patient three times in labour, in the years 1821, 1823, and 1826, and each time with most severe flooding immediately after the separation of the placenta. I employed the usual remedies, such as the sudden application of cold water to the abdomen, pressure to cause contraction of the uterus, with the administration of opiates, wine, and brandy, which were at that time common remedies. These were cases of great anxiety, and I had to remain with my patient several hours before it was safe to leave her.

In her third confinement, I was afraid she would die. After having used all my remedies, and having given her half a pint of brandy and a pint of port wine, which was of no avail, it occurred to me, that in the former cases in which I had attended her, when I had used the same means to check the hæmorrhage, that there was no amendment until she had ejected the contents of the stomach. I was, then, most anxious that vomiting should take place, in hope of relief, as she was rapidly sinking. I thought that as vomiting had been so beneficial to her before, I was in this case justified in producing it by giving an emetic. I directly gave her half a drachm of ipecacuanha; a full vomiting soon succeeded, and a large quantity of fluid was ejected. I was much struck with an expression of my patient, which I had several times heard before in similar cases, after vomiting. After a deep sigh, she said "O! I'm better; I'm better now." The hæmorrhage ceased directly, and did not return; the symptoms of sinking abated, and the patient appeared in her natural state of body, but very feeble. A little plain gruel was all the nutriment given her, and she recovered gradually from her weak state. I attended the same patient three times after years 1827, 1829, and 1831, with satisfactory result in favour of the which was about that time in this locality, I gave, a drachm of the powder to a child, a second such dose

the separation of the placenta. This remedy had the desired effect of preventing the hemorrhage, so that I had no further need of the ipecacuanha, or, indeed, of any other remedy.

Several years ago, I had a patient, on whom the secale cornutum had no effect in preventing the hemorrhage, and I gave the ipecacuanha with a favourable result.

For nearly twenty years, I have lost all confidence in the diffusible stimulants, such as wine, brandy, &c., in uterine hemorrhage, from a conviction that they increase the arterial circulation, and, consequently, the hemorrhage, and I find that opinion corroborated by the writings of Drs. Clutterbuck and Ramsbotham.—*Ibid.*

• [The utility of ipecacuanha in uterine hemorrhage has been proved by Dr. Osburn of Dublin, but I am not aware that he has recommended it in extreme cases of exhaustion or sinking.]

SURGERY IN NEW ORLEANS.*

For want of a medical journal in this city scarcely any of the important surgical operations, that have been performed in the South West, have ever been made known to the world. Almost every capital operation has, within a few years, been performed by the surgeon of Louisiana, and we now propose to notice briefly such as we have either witnessed, or have been related to us from authentic sources.

1. *Amputation at the Hip — Successful.* — Some years since, Dr. Walter Brashear of —, now retired from practice, performed this bold and terrific operation with a skill and success that would have done honour to the immortal Larrey. The case, we believe, has never been published, but we now take the liberty of placing the fact upon record, and beg leave to relate an anecdote in connection. During the winter of 1843-4, when the Hon. Henry Clay was on a visit to this city, we had the pleasure, together with some twenty-five or thirty physicians, of spending the evening with him at the house of a medical friend. Whilst at table, one of the company proposed "the health of the venerable Dr. Brashear, the first and only surgeon in Louisiana, who had successfully performed amputation at the hip-joint." Mr. Clay, who was sitting by the side of Dr. B., with characteristic good humor immediately observed — "You are on the hip, Doctor," to the great amusement of Dr. B. and the rest of the company.

rity Hospital, about two years since, by Dr. Stone, for a desperate gun-shot wound. The operation was well performed, and offered the only hope of life, but the case was too desperate, and the patient soon sunk. It was also performed at the Charity Hospital last year, by Dr. A. Mercier, for gangrene of the arm, after a maltreated compound fracture; but the case fell into the hands of Dr. M. too late, and although the operation was well performed, the patient sunk.

3. *Excision of the Parotid Gland.* — This operation has been twice performed successfully, by Dr. C. A. Luzenberg, — the first, about eight years ago; the patient is still living in this vicinity; the second was performed, in April last, upon a negro woman, about 35 years of age, for scirrhus. The gland was enlarged to nearly the size of the fist, very much indurated, and unmovable. This operation was performed in the presence of some dozen physicians, ourselves amongst them. As a preliminary step, dictated by prudence, a ligature was cast around the common carotid, to be tightened if necessary. Dr. L. then made an incision through the integuments around the whole base of the tumour. The dissection was then rapidly progressed with, but the hemorrhage soon became so profuse that the ligature on the carotid had to be tightened. This being done, the diseased gland was quickly, and in the opinion of all present, completely removed. A large and deep chasm was left in its place, which was filled with lint, covered with a compress, and the patient put to rest. The operation was well and rapidly performed, and the time occupied was about 30 minutes. The patient bore the painful operation with extraordinary firmness; having uttered but one or two groans during the time. No unfavourable symptom has followed, and the wound at this time is almost entirely healed.

4. *Amputation of the Mamma, and Ligature of the Femoral Artery.* — These operations have both been successfully performed, recently, by Dr. W. Stone; the ligature, for aneurism of the femoral artery; and the amputation for scirrhus of the mamma. In the latter operation, Dr. Stone left sufficient integument to cover the wound; it was brought together by adhesive straps, and quickly united by the first intention. We saw Dr. Stone perform the same operation for the same complaint, last year. The subject was likewise a negro woman. She was threatened nearly to death, and could not be induced to submit with any composure. As she was writhing and screaming with

all her power, Dr. S., with characteristic firmness, proceeded with his incisions, and removed the entire mamma, as also an indurated axillary gland. The wound was then covered with the flap, and quickly healed. It is now twelve months since the operation, and we learn the woman has no return of the disease. We have seen both of these operations performed by Dr. Luzenberg, within the last two years. Indeed, these two gentlemen have performed almost every capital operation in Surgery since they have been practising in New Orleans, and with a skill and success that would do credit to any city.

5. *Tying the Subclavian Artery.*—We have seen this difficult operation twice performed by Dr. A. Mercier; first, for false aneurism of the axillary artery, last year—unsuccessful; and very recently for aneurism of the subclavian itself; both on the left side. In the first instance, he operated below the clavicle, and the patient sunk from secondary hemorrhage. On the 21st of June last, he performed the last operation in the presence of a large number of physicians and other spectators. The subject was a negro woman, aged about 30 years. She belonged to a baker, and had long been in the habit of carrying a basket of bread upon her head which she held chiefly with her left hand. The aneurism made its appearance about eight months since, and continued to grow until it attained the size of a man's fist; situated just below the clavicle, and extending from the border of the axilla half way to the sternum. Dr. Mercier operated above the clavicle, and after the tedious labour of more than an hour, which he performed with great firmness and skill, he succeeded in fixing his ligature, and completely arresting the circulation. The case has since progressed most favorably, and there is now every prospect of a successful issue.

6. *Ligature of the External Iliac Artery.*—We are informed that this operation was successfully performed, a few years since, by Dr. H. Daret, upon a well known and worthy gentleman of this place, for aneurism situated very high on the femoral artery. The gentleman may be seen any day on our streets, and is indebted to skilful surgery for his life.

7. *Ligature of the Carotid Artery.*—This operation has been often performed in this city, but we cannot forbear mentioning the following interesting case:—A few years since a gentleman of Natchez, Mississippi, had the misfortune to receive a pistol ball

about the centre of the left cheek. It penetrated deeply, and the hemorrhage was so profuse as to place the life of the gentleman in the most imminent danger. Several days afterwards he was brought to this city in this perilous situation. He arrived here in the night, and Dr. Stone was called to see him. He at once saw that the only hope depended on tying the carotid; he immediately performed the operation by candle light, and with complete success. The gentleman is now living in this city.

8. *Excision of the Maxilla Inferiora.*—This operation has been successfully performed three times in this city, by Dr. J. F. Buegnot, for *Osteo-Sarcoma*—the first, in 1839, by dividing the bone with a chain saw, at the symphysis, and above the angle. The second, in the same manner. The third operation was performed in 1840. The disease in this case had progressed so far, that it was found necessary to disarticulate the bone at the *temporo-maxillary joint*; and thus the entire half of the bone was removed. The patients all recovered entirely.

We have thus enumerated some of the most important surgical operations that have been performed in this city and vicinity; there doubtless are others equally important, that have not come to our knowledge. The minor operations would be too numerous to mention.

CASE OF CONGENITAL MALFORMATION OF THE HEART.

BY JOHN BELL, M.D.

W. A.—, the second child of healthy parents, was born 30th of August, 1837. For the first two years of his life he did not manifest any peculiarity of appearance or disorder of function beyond occasional attacks of bronchitis, during which his face assumed a hue seen only in the most violent forms of bronchial congestion. From within eight months after birth until he had entered his fourth year I lost sight of this child.

After again resuming my professional intercourse with the family, my attention was directed to W.'s appearance and sufferings. His face and extremities were then of a dark blue, as were, also, his lips and tongue; the eyes prominent and shining, and the conjunctiva injected and of a purplish hue; nostrils large and dilated. The sternum and anterior

part of the thorax were unduly prominent. The ends of the fingers and toes are broad, swelled and pulpy. Respiration hurried and panting, and the breath emitted during speech with a kind of hissing sound; pulse frequent and rather full, but easily compressed. Impulse and the bellows sound well marked over the sternum. Dulness on percussion was of quite limited extent. The jugulars are much distended. The temperature of the skin, especially at the extremities, is below the natural standard. The appetite was generally good, and the discharges from the bowels and bladder were in normal quantity and regularity.

This boy is easily alarmed, and in the early part of the night often jumps up in affright, as his mother relates; but we may rather suppose that his restlessness proceeds from difficult breathing and an occasional sense of suffocation at this time. His disposition is cheerful, and, unless when suffering from a paroxysm of bronchial congestion, he is mild and easily pleased. He runs about and amuses himself in the same spirits as other children of his age. He lies indifferently on either side. It is not necessary to give the particulars of the repeated attacks of pulmonary oppression and congestion to which this poor little fellow was subjected at irregular intervals; from the time at which I begin this description of his case, in his fourth year, up to that of his death in June, 1845, or two months short of his being eight years old. These were generally induced by the usual causes of catarrh, and sometimes by indigestion. Within the last two years these attacks became more violent, and left him weaker and more irritable and nervous, with less inclination for exercise or attention to his school lessons. The prominence of the sternum and left side of the chest went on increasing; the distention of the jugulars and the pulsation were still more perceptible. The sounds in common were not strong, although those of regurgitation were quite distinct. During

a paroxysm, there was, however, a loud bellows and rasping sound, with another less evident and comparable to a subdued gurgling, or churning, over the sternum. The pulse all the while was frequent but without force. Directly applied over the region of the left ventricle, or to the stethoscope on this part, the ear received the impression of weak sound and movement.

At two different periods, together with great precordial and pulmonary oppression, dyspnoea, &c., there was tympanites, obstinate constipation, and anasarca, against which all the usual diuretics and means of indirect reduction were utterly powerless. Recourse, however, to venesection in quantity varying from two to four ounces, and sometimes cupping, once over the loins, when there was a suspension of the urinary discharge, and, at other times, on the chest, exert an immediate and beneficially controlling influence over the disease, the restoration from which, as far as regards the symptoms enumerated, was as sudden, as it at the time was violent and alarming. The common purgatives, diuretics, and expectorants, would then manifest their customary good effects. Relief was sometimes procured from the wine of colchicum with carbonate of potash, and when the oppression was great, with carbonate of ammonia. Little or no benefit was derived from digitalis. In the two last attacks, the blood was almost entirely destitute of serum, there being not a table-spoonful of the latter to four ounces of the former.

On recovering from the attacks of acute disease, and especially when active treatment had been employed, the skin lost in a great measure its blueness, and approached nearly to its natural colour: but the characteristic expression of the eyes was still preserved. The appetite was generally good, and the craving for various articles, some of them of an indigestible nature, inconveniently great.

The last and longest attack was during the last few days of March and

the first three weeks in April of the present year. At this time, the extreme oppression and dyspnoea and other evidences of excessive labour of the heart, coupled with the evidences of malformation of this organ, and the tympanites and anasarca, forbade the hope of recovery, and death was looked for from day to day. Contrary, however, to an apparently evident prognosis, the little patient rallied under the effect of two venesections; the anasarca disappeared, and his feet and legs, at one time enormously swelled, recovered their former size and appearance, and all his functions were restored to their usual condition. He was able to go about the house, and seemed to be, with the exception of weakness, as well as his peculiar state would allow.

On the — of June he was taken out to ride, and he enjoyed greatly the change. On his return, however, he complained of oppression and difficulty of breathing, which rapidly increased, and in a few hours, and before he could be visited by a physician, he was dead.

Unable myself, owing to an accident which confined me to the house, to visit the subject of this case at the time of his death, or to make a *post-mortem* examination, I was fortunate enough to procure the kind offices, on this occasion, of my friend Dr. J. K. Mitchell, by whom, with the assistance of Dr. J. M. Allen, the dissection was made. From Dr. Allen I derive the following notes of the autopsy:—

“Unusual engorgement of the vessels, both superficial and deep seated, with uncoagulated blood. Each pleural cavity contained five to six ounces of serous fluid—the pericardium, a small quantity. Heart very much enlarged, depending entirely on hypertrophy of right side,—the parietes of right ventricle being nearly twice its normal thickness. Nothing peculiar in the appearance of the right auricle. General appearance of left side of the heart natural, excepting its atrophied condition. An opening about half an inch in diameter at the upper part of ventricular septum, common to the two ventricles and the aorta.

Ascending aorta nearly twice its natural size, semilunar valves at its mouth correspondingly large. Ductus arteriosus open, and sufficiently large to admit a goose quill. Pulmonary artery of its natural size at the entrance of the arterial duct, but gradually tapering towards the right ventricle, with which it communicated *directly*, by an opening so small as scarcely to admit the introduction of an ordinary probe. The foramen ovale not entirely closed, but evidently not sufficiently open to allow of any deleterious admixture of venous and arterial blood.

“The only direct communication between the right ventricle and the pulmonary artery, was so small as to escape observation until the artery had been opened and carefully explored. Did this opening at the mouth of the pulmonary artery, during life, transmit blood to or from the right ventricle? The form of the artery and the absence of any valvular arrangement at its mouth, would, it appears to me, favour the former idea.”

BULLETIN.

Philadelphia, August, 1845.

Esquirol on Insanity.*

The profession is much indebted to Dr. Hunt for translating, and to the publishers for sending forth this volume, which embraces the main and practical portion of the large work of Esquirol, *Sur les Maladies Mentales*, &c. The omission of portraits of individuals affected with the various forms of insanity, and of details of plans for the construction of insane asylums, could well be spared to the American reader: the former are more curious

* *Mental Maladies. A Treatise on Insanity.* By E. Esquirol; Physician-in-chief to the Maison Royale des Aliénés de Charenton, Formerly Inspector-general of the University, Member of the Royal Academy of Medicine, &c. Translated from the French, with additions. By E. K. Hunt, M.D. Philadelphia: Lea & Blanchard, 1845. pp. 496. 8vo.

than instructive, and the best plans are, we believe, fully carried into practice in various asylums in the United States.

In looking over this work we are reminded of the time, now twenty-five years ago, when it was our good fortune to hear the lectures of the distinguished author at the Salpêtrière. It seems to us as if we were reperusing our notes taken on that occasion: we meet with the same division and arrangement of topics, the same views and cases which imparted so much interest to the lectures, delivered as they were, in an easy, conversational manner, contrasting not a little with the common rhetorical fashion of many of his contemporaries and associate teachers.

To praise the writings of Esquirol on Insanity were indeed superfluous. Must we not add, that not to read and to study them would argue indifference to the acquisition of knowledge on this most important subject, involving as it does, the health, life, and usefulness of the patient, the peace of mind of relatives, and often the vital interests of the community in regard to personal safety against the sudden outbreaks and wide spreading delusions of monomania.

The prominent heads of topics in the volume before us, are, *Insanity* in its general mental characteristics; *Hallucinations*; *Illusions*; *Fury*; *Mental alienation of those recently confined, and of Nursing Women*; *Epilepsy*; *Critical Terminations of Insanity*; *Lypemania, or Melancholy*; *Demonomania*; *Suicide*; *Monomania*; *Mania*; *Dementia*, and *Idiocy*. On all these, abundant information, being a blending of general description with details of particular cases, is conveyed, to the avoidance of speculative discussions, dogmatisms, and hasty generalisations. Mr. Esquirol is the patient and conscientious historian of the observations made by himself in some of the largest asylums for the Insane in Europe; and likewise in his own private establishment and in general practice. He followed wisely the bent of his in-

tellect, and did not aspire to create an era by grand combinations, or new and startling deductions.

Doctor Hunt has acquitted himself well of his share, as translator and annotator. We have not room for many extracts. The following on *Epidemic Monomania* seems to us to be peculiar apposite to the state of our social system (?) in the United States, and is pregnant with instruction. We do hope that our clerical brethren will take the lesson to themselves; and not be content with simply holding back from certain religious delusions, but at once proclaim its mischievous tendencies. Ignorance, fanaticism, and hypocrisy, have no right to quote and misconstrue scripture more than the systematic scoffer and heartless infidel. Miller and his set have discoursed infinitely worse and more blasphemy, than Voltaire, Hume, and their associates.

M. Esquirol says:—

"Monomania is sometimes epidemic. Was not that strange disease, which desolated Holland and the province of the Rhine in 1373, under the names of *mal des ardens*, and *mal de Saint-Jean*, an epidemic? Those who were attacked with it, laid aside their accustomed habits, crowned themselves with flowers, and carried them in their hands. They ran about the streets also, and into the temples, singing and dancing. The abdomen was so greatly distended, that many would have died, had they not taken care to swathe it. The writers who give an account of this strange disease, inform us, that the laboring classes abandoned their occupations. They add, that the rich took care to protect themselves by their domestics, through fear of doing violence to their persons, and in order to avoid those objects which might injure them. This precaution shows, that among this class of patients, the delirium was partial.

"In Don Quixôte, we find an admirable description of monomania, which prevailed over nearly the whole of Europe, in consequence of the crusades: a medley of amorous extravagance, and chivalrous bravery, which in many cases was a real insanity."

To these remarks, Dr. Hunt appends the following judicious reflections:

"Probably no event in modern times has

furnished a fairer example of epidemic monomania, than the great rally in behalf of what is now known by the appellation of 'Millerism.' This delusion originated in the readings, reflections and dreams of one Wm. Miller, of the State of New York, who, in one or all of the ways specified, came to know about the year 1840 at what time 'the Lord was to appear in the Heavens,' and the end of all things to come. He soon found adherents—as will the author of any 'humbug' however palpable—who, with a zeal worthy a better cause, set themselves to proselyting. They went abroad preaching their doctrine to all who would hear, and publishing their views to the world, through periodicals and newspapers, which owed their origin to the success of the learned author and abettors of this new creed in leading astray the people. At the outset, they pitched not only upon the year, but the day and hour on which 'the Son of Man should come, with power and great glory.' A doctrine like this, solemn and momentous beyond expression,—spread abroad with all the rapidity that novelty could lend to it, the zeal of its adherents effect, or its importance inspire, soon collected around its standard, throngs of ignorant men and silly women, who hugged the delusion, as the announcement of great events, and the supporter of raptures and glorious ecstasies. The beggarly amount of intellect with which its deluded followers were possessed, soon yielded to the force of religious excitement, and long before 'the time drew near when they were to be received up,' they forsook their respective callings, closed their shops and stores, left their families to suffer, or to the cold charities of the world, attending meetings for prayers and exhortations, 'rendering night hideous by their screams,' and by ceaseless prayers and watchings, intending to open in 'the great day of the Lord.'

"The excitement of which the above brief representation furnishes, by no means an exaggerated description, soon began to produce its effects upon both the bodies and minds of these wretched beings. A pale and haggard countenance, indicative at once of physical exhaustion, and great mental solicitude, strange and erroneous views in reference to their worldly relations and affairs, together with their conduct, which showed that the controlling power of reason was swallowed up in the great Maelstrom of Millerism, all indicated the shock which had been produced by the terrors of this fearful delusion. As the time for the great

denouement approached, meetings increased, their prayers and praises ascended upward, and were heard far and wide around, converts were multiplied, baptisms were celebrated, not by sprinkling, but by immersions, which lasted sometimes longer than life, the gift of tongues was vouchsafed, ascension robes of snowy whiteness were made ready, property was freely given up to the priests instead of the poor,—and on the morning of 'the great day,' with hearts prepared and decked in robes of peerless white, they go forth to meet the 'bridegroom.' Some, not content to meet him upon the earth, actually ascended trees in order to greet his first approach. The day first announced, passed off quietly, and as on other days, the world and the world's people jogged on in their accustomed course and round of duties. But great was the disappointment of the deluded followers of the doctrine of 'Miller.' Their time for weeks and months had been lost, their business broken up, and their property gone. Yet, to exhibit, as it were still more forcibly, the strength of religious fanaticism operating upon weak minds, they still clung to their delusion; again 'searched the scriptures,' and happily found that they had been in error. It was on a certain day and hour of the Jewish year 1844, on which their calculations should have been based, instead of the corresponding year of our calendar. The joyful fact was spread abroad throughout the realms of Millerdom, and at it they went with greater zeal and fervor, if possible, than before.

"Our Institutions for the Insane, however, were daily furnishing new proofs of the mental ravages it was producing throughout the country. Miller maniacs were almost daily brought to their doors, worn out and exhausted by the ceaseless orgies of this devoted sect. Some were already in heaven, clothed with the new bodies provided for the saints; others, like spectres were hastening to convert to the same faith their fellow victims to disease; while a third class refused to eat, having no further need of other 'than angel's food.' So strictly did many of the 'believers' adhere to cherished passages of the Sacred Scriptures, that they declined to go abroad to respond to the calls of nature; because forsooth, we were commanded 'to become as little children;' and hence soil their under-dresses. None slept, or slept but little; all were waiting; waiting in obedience to the divine command, though sleep; alas, was far from their eyes, in consequence of the long-continued watch-

fulness which had been imposed. They had passed the point of sleep; some of them the rallying point of exhausted nature, and sunk to rise no more. Scores of the victims to this modern delusion, were known by all to be the tenants of Mad Houses, and it was promulgated far and wide by the most respected authorities, that this was a legitimate result of their misguided views and acts; yet it fell unheeded upon the ears of those for whom in kindness it was designed. Meanwhile, the period approached when the correctness of their last reckoning was to be verified, and all appointed means of excitement were called into requisition. If possible, a more firm conviction of the truth of Millerism existed in the minds of its followers generally, than before: converts to it had increased, and all the elements of a prodigious and extended commotion were concentrating, preparatory to this great event. The scenes which were enacted in view of the fulfilment of this second interpretation, greatly exceeded the first. Like the first, it proved to be the 'baseless fabric of a vision.' Rational men then said, 'they will now give it up,' and the same men were all of one mind on the subject. The 'Cry' of Nov. 22d, 1844, however, announces the fact, that 'our brethren and sisters are not only strong, but much stronger than ever. Our brethren are all standing fast, and expecting the Lord every day.' For centuries probably has no excitement been fraught with more deplorable results, both to the bodies and minds of men than this, which has already been characterized by two marked and striking crises. Still the fever rages, notwithstanding these critical periods, which usually betoken a fatal termination, or a gradual restoration to health. Though a firm and uncompromising friend to the doctrine of 'toleration' in all matters of opinion not inconsistent with reason and the interest and welfare of man, I am here in favor of restraint; nor do I know of any better way to check the progress of this piece of modern fanaticism, than to let it rage within the limits of the law; conveying to those receptacles of human woe,—our Insane Hospitals,—those whose mental condition requires it, appointing guardians for, or sending to work-houses, such as refuse to provide for themselves or families, and incarcerating such as may be found, seizing with unholy hands, under the guise of religion, the miserable pittance of deluded men and women.

"I have gone over the surface of this subject, I allow. I did not approach it for the

sake of its statistics; to inform the profession or others particularly, respecting its principles, or to compare them with those of other sects. My intention has been to glance at its leading features as they appeared in the practices of its believers; showing the tremendous mental commotion they were calculated to produce on weak and excitable minds; and state in general its results, and the means, so far as practicable, of doing away this great popular evil."

The section on Reasoning Monomania will command the serious attention and study of the reader: it is so far a *questio vexata* even in medical jurisprudence, and a sore puzzle to not over wise juries and underlearned judges.

To the opening remarks on Monomania resulting from drunkenness, we would take more exception than to any other part of the work now before us. Large and general experience, both of individuals and communities, embracing every calling and profession, and imaginable exposure and hardship, is decidedly adverse to the author's assertion, in reference to fermented drinks, that "In Russia, Sweden and Denmark; in cold and damp countries like Holland and England, they need excitement, to resist the influences of the climate." The excitement required is not procurable from alcoholic drinks of any kind, whether they be fermented or distilled. He adds:—"In North America (United States?) there are annually, says a public officer, 37,000 inebriates. In that country intemperance produces three-fourths of the crime and mental alienation, and we can say the same with respect to the north of Europe." Surely the benefits growing out of the general and habitual use of intoxicating drinks ought to be general and extraordinary in order to balance the great and undoubted evils arising from this use. This, the true point of view on this question, is that which the sophists, the heedless, the strong in their over feelings of security under the habitual use of intoxicating drinks, continually overlook or avoid.

Dowler on Febrile Caloricity.*

In the midst of disease and death, wearied with hourly attendance on the sick, and unceasingly anxious to devise the best means of treatment, the physician who can so far abstract his mind from these scenes and circumstances as to be able to watch every new feature, and to devise new experiments, either to elucidate the pathology or to improve the therapeutics of the disease, is truly a philosopher in the largest and best sense of the term. Were it not that every epidemic finds even more than one zealous and careful historian, the community might marvel that such a person could ever be found; and the wonder must be increased when it is known that the larger part of the discouragements and annoyances to which he is subjected arise from his attendance on the poor, either at their own houses, or in hospitals, without compensation either from them or the public authorities, who, on all other points, make ample provision for their support while in the hospital.

In reference to his own meritorious experiments, Dr. Dowler justly remarks:

"Few, except those that have gone over the same ground, can imagine the labor and irksomeness of these dismal researches along the frontiers of death. Silent, alone, sitting for hours on a coffin, among dead bodies, bearing on their saddened faces the impress of the last agony, watching the wanings of a lingering vitality and the steady advances of the great annihilator, decomposition, with scalpel, pencil, book, and thermometer, like Sterne's prisoner in the dungeon, who etched down with a nail his diurnal history—these are circumstances that fiction cannot heighten; pursuits that honest Charon, the ferryman to ghosts, upon the dark and polluted Styx, would scarcely undertake. The fabled shades, Sorrow, Fear, Sleep, Night, Sickness, and Death, and the Valley of Tears, might very well be located in and round about hospitals and dead houses."

* Experimental Researches upon Febrile Caloricity, both before and after Death. *Post-Mortem Fever*. By Bennet Dowler, M.D., of New Orleans. In *Western Journal of Medicine and Surgery*. June & October, 1844.

The concluding part of the title of Dowler's essay "*Post-Mortem Fever*" is a misnomer. Fever conveys an abstract idea deduced from many and various phenomena, all of them, however, the product of vitality; and hence it cannot be a term applicable to the dead body. One of these phenomena, the increased evolution of caloric, may continue, it is true, to be observed after death; but as this alone does not, even in life, constitute fever, with still less propriety can we speak of it as fever after death, or "*post-mortem fever*."

The author thus states the subject of his essay, and adds some pertinent remarks, which we reproduce in his own language.

"The following inquiry relates not to the physiology, pathology or therapeutics of temperature, but to its morbid and *post-mortem* history. It is not a little remarkable, that the facts should be so few and so discrepant on this subject.

"Will not the period arrive when the thermometer shall become the constant companion of the physician, and his guide as to certain remedial measures at the bed-side? Or is it a matter of indifference, in all diseases, whether the patient be plunged into a hot bath, or steamed nearly to scalding by the Thompsonian doctor, or macerated in cold water by means of cloths for hours, then plunged into a cold bath, to be followed with interminable douches and drinks? Must the patient during every walk, at every water-fall or pool, take a fresh bath, plunging and drinking like a fish, after the mode of the Silesian farmer, *Priessnitz*, and his many followers?

"The Thompsonian declares that the only cure is heat; the Silesian, that the only cure is cold water? Why should a sick person, every where from 5° to 8° hotter than in health, be subjected to hot mustard baths, or another suffering from concentrations of internal heat, while the skin is in an algid collapse, be enveloped in the cold water apparatus? Is there no criterion but caprice? If the physician has not the patience to call to his aid the thermometer in order to give precision to his prescriptions, let there be a Thermist or Thermometer-man, or let the copper add this instrument to his apparatus. At the present moment, while the cold-water treatment is spreading, it is the more necessary to seek precise knowledge upon this subject."

PARTS TO WHICH THE THERMOMETER WAS APPLIED.

"The principal points of demonstration in the living body are the following: The hand, the axilla, the folds of the groin, the perineum, and the back part of the knee joint, when the leg is bent so that the heel shall press against the thigh. The horny induration of the skin of the hand incidental to laborers forms no objection if the instrument be held properly. It is a remarkable fact that the patient, even when more or less delirious, is apt to hold the instrument in a perfect manner; he grasps it a little too strongly; he fixes his attention upon it and drops his incoherent conversations. In raving delirium and deep coma, the operator's fingers must be applied so as to close the patient's hand, or a bandage, or a handkerchief may be used for the same purpose. When the instrument is applied in the axilla the patient by lying on his side compresses it effectually excluding the air: nearly the same effects may be attained in the perineum, and in the scroto-inguinal region by crossing or flexing the thighs. The popliteal region is one of the most convenient places, though unfortunately it did not occur to me in time to avail myself of it to any great extent; the patient lying on his back draws his heel against the buttock, or he may lie on his side and do the same, or the leg may be fixed against the thigh by carrying a single band around the ankle and upper part of the thigh. These points form for practical purposes a good, though not a perfect calorific circle, because the feet and head are excluded. The tongue so much relied on is for many reasons ineligible; breathing, moisture, evaporation modify the result; it is inconvenient and repulsive, and if the patient be delirious it is impossible.

"In the dead subject these points, except the hand, are alike available, together with many others of greater value, as the rectum, vagina and artificial punctures, by which all the cavities may be explored with facility. These latter should be made no larger than is absolutely necessary to admit the instrument, say the third of an inch, and in such a manner as to exclude the air. This is easily done upon the chest, &c., by drawing the skin, so that when punctured it shall act as a valve over the internal orifice. The highest portion of the pericardium and heart may be stabbed, so as to admit the instrument without exposure; the instrument may be forced into the parenchyma of the liver without any cutting in most cases.

"For a considerable time I was at a loss

how to reach the brain without exposure. All known modes of opening the brain are bad, nay sometimes murderous in a pathological sense; the saw cuts vessels in the dura mater or even deeper, causing sanguineous effusions and discolorations, discharging, at the same time, the serosity in the arachnoidal sac; the hammer often produces the rupture of minute vessels at and under the point of the stroke. Even on the other side of the head, where the counter stroke (*contre-coup*), is received, ecchymoses and bloody infiltrations of the membranes of the brain may and often do thus happen.

"At length it occurred to me that the orbit of the eye would afford every possible facility of reaching the brain without admitting the air. The tissues at the inner angle of the eye were divided — an iron punch as large as the thermometer was used to perforate the thin bones of the orbit which requires but little force — the thermometer passes readily, without even destroying the eye in most cases.

"Though I have not restricted my observations to yellow fever, yet this is perhaps the best fundamental type, not only for the study of febrile pathology in general, but for the study of temperature, because it is the most acute fever known, and because the various tissues of the body are usually but little altered by remote secondary sub-lesions, of a general character, not directly connected with the disease. For example, the exterior of the body though much discolored, presents no bed sores, no emaciation — the muscles no paleness, softness, inelasticity — the cellular tissue no serosity — the organs no atrophy, &c. The original malady is not lost in the labyrinth of tedious, transforming, secondary affections.

"The external calorificity of yellow fever, is, in the living body, usually greatest in its primary, less in its middle, and least in its closing stages, at such points of demonstration as are most easy of access, though these variations may or may not prevail in the central organs. These propositions will be proved hereafter."

EVOLUTION OF ANORMAL HEAT. —

Some preliminary observations were made showing the difficulties which still beset the subject of animal heat in its state of normal evolution. The author combats the opinion, that those parts which are most distant from the heart and the limbs are colder than the trunk; and he contends, on the strength of ex-

periments which he details, that the thermometer, when held with a moderate grasp in the hand, protected from the air by suitable covering, will rise as high as when it is applied to the central regions of the trunk.

Differing from physiologists in general, Dr. Dowler believes that the living body is susceptible, without danger, of a much greater reduction of temperature than is commonly alleged; and he, in harmony with a previously expressed opinion touching the equal diffusion of caloric through the body, both on the surface and at the extremities, and in the interior, asserts that if we cool the extremities or a portion of the surface, as the skin of the face and temples, for instance, by cold water, we shall procure, also, a reduction of the temperature of its internal organs, of which that of the hands may be taken as a measure. On this point we do not deem the experiments to be satisfactory; and hence, while we repeat the conclusions of the author, we do not assent to their soundness; although, if proved, they would harmonize with, and corroborate the opinion which we have elsewhere advanced (*on Baths and Mineral Waters*) of the simultaneous reduction of temperature and excitement of the skin and mucous membranes consequent on the general application of cold to the former.

"It will be seen by some of the preceding experiments, that cold air and cold water even partially applied, in rooms, with and without fire, cause a reduction of the temperature sometimes 33 or 34 deg. below the natural heat; this depressed temperature so far from disappearing in a few minutes continues for an indefinite period, probably involving the whole system as well as the accessible points upon the surface, as appears, perhaps, analogically during refrigeration from applying cold to the forehead, opposite arm, and to the feet, while the rest of the body may be clothed comfortably. I felt no injurious effects from these refrigerations, except, perhaps, a boil just above the knee. As hydropathists ascribe these affections, or at least eruptions, to cold applications, and as I have been entirely exempt from them heretofore, I think it proper to

mention this fact. There can be no doubt that even a moderate cold steadily applied will produce a great and long-continued reduction of temperature, extending to the whole system, a fact, the pathological and therapeutic value of which, must sooner or later be appreciated in caloric excitements, irritations, congestions, and inflammations."

In another part of his essay, the author tells us:

"The summary drawn from the following averages, carefully prepared from accurate tables during 16 continuous days of the month of June, shows that in a healthy person the temperature of the hand and of the urine is the same — a fact not only proving the physiological dogma which claims for the centre a heat much greater than that enjoyed by the extremities, to be erroneous; but it suggests an easy and direct route by which to ascertain the morbid heat of one great centre during life without vivisections, or the equivocal method of acupuncture, adopted by Becquerel and Breschet.

"During the period above mentioned the air averaged in the mornings and evenings at the time of the observations, 83.2°, the hand 99.5°, and the urine 88.37°. There the hand was 1.13° hotter than the urine; but as more or less heat was necessarily absorbed by the glass vessel receiving the urine, notwithstanding every precaution, it may be fairly assumed, that the palmar and pelvic regions are equal in temperature."

PECULIARITIES OF THE MORBID EVOLUTION OF CALORIC. — While awarding full praise to Dr. Dowler for his zeal, good faith and ingenuity in performing his experiments to illustrate the phenomena of caloricity in the diseased and dead body, we cannot but regret that he has not followed a better method in treating his subject. We should like to see more distinctly separated the propositions which he thinks he can prove, from the experiments by which the proof is made, and both of these apart from the conclusions deduced or deducible from them. One chief cause of some obscurity in his division of the matters investigated, doubtless proceeds from the very abundance of his materials, and the consequent difficulty of abridgement and condensation, so to preserve the main features and connexions. He regrets, when advert-

ing to this cause of embarrassment, his inability "fully to develop the most interesting feature in this enquiry, viz., the regional calorificity at different periods, especially at different periods in the dead body."

After noticing the prevalent opinion, reduced to the formula of a physical law, that the human body after death cools like inert matter; and that this process begins at the surface and extremities, Dr. Dowler assures us that "this law, so far from applying, is reversed soon after death, in this city (New Orleans), at least, in bodies recently dead from fever, with perhaps a few exceptions, as will appear hereafter." And again: "Even when refrigeration commences it seldom follows this law rigidly, at first, as it does not proceed on the surface, in a ratio proportioned to its distance from the centre, and in any arithmetical progression, at each successive period of time. The calorific maximum is often found at the surface; then it is, perhaps, set up in the centre, soon to reappear on the circumference. The body, like a metallic statue, will then discharge equal degrees of heat, in equal intervals of time, until an equilibrium is established between it and the surrounding media, as before explained. Does not this afford presumptive proof, that morbid caloric differing as it does in laws, must differ in nature and origin from common caloric derived from the sun, the earth's centre, the consolidation of bodies, and friction?"

Dr. Dowler divides the analysis of the tabular summaries of his experimental observations into the ANTI-MORTEM SERIES and the POST-MORTEM SERIES; noting the maximum, minimum, and mean temperature of the hand and axilla in the first, and of the axilla, thigh, perineum, rectum, epigastrium, chest, heart, liver and brain in the second series. The author has omitted to indicate distinctly, the difference in temperature between the living body in a state of fever, and of the dead body when death resulted from this disease, and we have not time to supply this

omission. The patient reader may, however, by comparing the two sets of series, reach this conclusion for himself. Dr. Dowler would have us infer that the different stages of the fever are characterized, among other things, by different degrees of temperature of the body and of its several regions. The chief curiosity in his experiments is the not infrequent augmentation in place of decrease of temperature after death, and its persistence at the surface at a height equal to that observed in some of the internal organs. Thus, if we take the mean of the temperature of the axilla in all the stages of yellow fever, as deduced from the separate means given by the author, we find it to be 102.25 deg.; whereas the mean, at the same spot, resulting from experiments made on 43 dead bodies, during a mean duration of 1 h. 32 m. after death is 104.44 deg., or 2.29 deg. more than during life. And again, as respects the comparative temperature between external and internal parts, we find that the mean heat of the skin of the thigh was 104.71 deg., and of the perineum 104.45 deg., while that of the chest was 102.95 deg., of the right side of the heart, 103.5°, of the brain, 98.71°, and of the liver, in nine cases, 106.33°. It would appear that the only internal organ, the heat of which exceeded that either of the skin, of the thigh, or the perineum, was the liver. Hours, as we learn, transpired after death, before the maximum temperature in particular regions remote from the centre was reached; "then, sometimes declining to the temperature of the centre, both keeping pace for a time, and then the centre falling more rapidly, leaving the thigh stationary, at, perhaps, 106°, for many minutes—reversing all the laws of refrigeration known to philosophers."

Dr. Dowler advances the position that morbid caloric, as he terms it, differs from other kinds of caloric of the same temperature. Of course if we admit his phraseology, we cannot refuse his conclusion. The proper terms in

which to state the affirmation are, that the caloric developed during fever or other morbid processes in the body, differs from other caloric of the same temperature. This creed has obtained at different times before now, and is not without plausible arguments in its favour.

The author concludes by some reflections, which we here subjoin as of suggestive, if not demonstrative, value, with our best wishes for the success of his future investigations into the arcana of diseases.

"This paper fully demonstrates that a great development of morbid heat takes place upon the surface at the invasion of yellow fever, and though in the closing period, especially in the agony, a temporary recession occurs as to the surface, yet, no sooner is the conflict ended, than the original morbid caloricity, no longer rendered latent by evaporation from the skin and lungs, reappears in all its intensity for a period considerably prolonged. If we suppose the central, the great vital, organs to be as hot during life as they are found to be after death, the only wonder is that vitality should maintain its seat for a week or more, under the positive changes that ought, by every law of caloric, to take place in the molecular arrangement of the tissues. Let us suppose the brain in life to become as hot as the thigh is found to be after death, that is 14° or 15° above health; the cerebral mass would necessarily expand faster than its cranial walls; the fluids would dilate, and perhaps transude; compression would be the consequence, attended with convulsions, coma, and other effects incompatible with life. Suppose any other organ should become such a focus of morbid caloric only for a moment, would not each vessel from dilatation lose its healthy elasticity and cohesion, and thus pave the way to sanguineous congestion, admitting the blood to the part as effectually as the cupping glass does when the pressure of the atmosphere is removed. In some local diseases, the lesions will afford an average alteration as great, if not greater, than fatal gun-shot wounds, as, for example, dysentery, consumption, and cancer. But in fever how much is entangled and unexplained! Is not morbid caloric the agent that eludes the knife of the anatomist? To say nothing of its directly poisonous, let us consider its mechanical effects, as above mentioned, upon the brain.

After dilating its delicate vessels, and establishing a sanguineous congestion, death follows. The brain, as we have shown, falls sooner than other parts under the law of refrigeration; the cranium contracts; this tremendous force drives the blood down from the brain towards the warmer and more yielding centres of the trunk; perhaps a real apoplexy, without rupture, has disappeared. The febrile subject offers many instances of great vascularity of the vessels of the pia mater, without turgescency; the veins especially, are full but flattened as if by pressure. There can be no doubt that in the living, as well as in the dead body, foci of caloricity establish themselves in particular parts, sending off, not always in right lines, but in deflected currents, morbid heat to certain organs, passing by others. Thus the epigastrium and axilla may stand charged with a positive caloricity of 109° , while the organs of that part of the chest lying between these points shall be in a negative, or much lower state of temperature. I could muster serried columns of facts illustrative of some other points, but I must omit them altogether.

"So far as morbid caloricity can be identified as a cause of disease, we deal with a positive, not an imaginary agent, where the ground is not eternally slipping from beneath our feet. Albumen, which abounds in the brain and fluids, coagulates at 160° ; hematosine, the coloring matter of the blood, at 149° ; and moderate increase of heat vastly augments the solvent powers of the serum over gelatine, so abundant in the body. The phosphorus in the body, were it uncombined, would burn in a heat less than 113° .

Guthrie on the Diseases of the Urinary and Sexual Organs.*

M. Guthrie's reputation as a military surgeon is considerable; and to the circumstance of his Surgical Lectures having been attended by medical officers of the army and navy, are we indebted for the present work, the first edition of which was published at their instance. It will be found, without

* On the Anatomy and Diseases of the Urinary and Sexual Organs, containing the anatomy of the Bladder and of the Urethra, and the treatment of the obstructions to which these passages are liable, by G. J. Guthrie, F.R.S., &c., &c. From the third London edition. Philadelphia, Lea & Blanchard, 1845, pp. 150, 8 vo.

professing any claim to profound pathology or to methodical therapeutics, to be useful by its practical hints and directions.

After describing the *Structure of the Bladder*, the author next treats of *Stricture of the Urethra*, under the divisions of *Spasmodic, Permanent, and Impassable*; and its *Symptoms and Means of Cure*. Thence he passes to a consideration of *Suppression and Retention of Urine*, and of *Irritation of the Membranous and Prostatic parts of the Urethra*.

The volume now published is but the first part of the work which M. Guthrie proposes to write. "The second part will follow with the least possible delay; and will contain the Chronic Complaints of the Prostate, the Diseases of the Bladder, the Treatment of Calculous Affections, and the various modes of operating for the removal of the Stone from the Bladder."

An adequate idea may be formed of the author's fashion of teaching a subject by the following extract, which we take from the first part of his third chapter,—"*On the formation of Spasmodic and Permanent Stricture*."

"In maintaining the opinion that the urethra is elastic, and not essentially muscular, I am not disposed to admit that the changes which take place in it, and lead to the formation of stricture, can occur from *inorganic elasticity* only, or the same kind of property which is found in India rubber; but that something must necessarily be added, to enable us clearly to understand the subject. I am led, therefore, to make a distinction between the common elasticity residing in a spring, or in India rubber, and the *vital elasticity* which exists in all the elastic parts of the human body, subject to the changes which may take place in it under disease.

"The principal derangements which follow these changes are said to be *spasmodic* or *permanent*."

"The only case of what may be called pure spasmodic action which has come under my observation, occurred in a gentleman, who came to my house twice in the course of several years, declaring he could not make his water, and desiring to have a catheter passed; which was each time done

without the least difficulty. The first time he came he was quite aware of his situation; said it arose from anxiety of mind relating to family affairs, and that the passage of the instrument would immediately and effectually relieve him. If there were an obstacle, and I was by no means certain of there being any beyond a hesitation, it was at the commencement of the membranous part of the urethra, and arising, I suppose, from a spasmodic contraction of the compressor urethræ muscle. As this gentleman suffered no kind of inconvenience at any other time, I am induced to believe that there was no particular irritation in the urethra, and that it was, as the cause is unknown, what may be called accidentally spasmodic. I have heard of a lawyer, but I do not recollect where I heard it, who often suffered in this way when engaged long in court in a difficult case, and who was always relieved in a similar manner; but here I should say it is more than probable the individual was laboring under some slight permanent irritation in the urethra, or that it was at least in an excitable state at some one part near the bulb. A healthy man suffering from anxiety and alarm, often feels a desire to pass his water, which he cannot at all times restrain, and it flows whether he will or not; but if he has the power of restraining it for hours, then, indeed, the powerful contraction of the compressor urethræ may bring on irritation in the part, and spasm of the muscle; but this is the result of its own irregular and long continued action, inducing irritation as the first step to inflammation, and is of exceedingly rare occurrence; still it is not an instance of pure spasm, like the case I have related, in which the incapability was preceded by no uneasiness until the attempt at micturition was made.

"The more common cases, which are usually considered spasmodic, are those of young men, who, when suffering from gleet or gonorrhœa, which have been imperfectly or only partially cured, are tempted to commit an excess in wine or punch. After sitting some time, they feel a desire to make water, which they repress, or perhaps indulge with some difficulty, but which increases, and is soon found to be irrelievable without assistance. The greater the effort, the more determined the straining, the greater the agony; and the sufferer, with despair depicted in his countenance, entreates relief. The practice often recommended in such cases is, to relieve, first, the spasm by sending him to bed, by putting him in a hot

bath, by fomenting the parts with hot anodyne fluids, and by giving him a dose of the pulv. ipecacuanhæ comp.; under the influence of which, in the course of a few hours of misery, it is not improbable that the urine may begin to flow. He is then to be purged, and it is likely that his urine may the next day flow in a full stream, when the evil subsides. I was taught a better practice many years ago by a Scotch friend of mine, a young man although an old soldier, who, after a debauch of this kind which lasted half the night, found he could not make water when he awoke in the morning from his feverish dreams. He sent for me, begging I would bring a catheter with me. When I arrived, I proposed a warm bath, an opiate draught, etc., his answer was peremptory enough, 'Damn your draughts, Doctor: pass the catheter, I have had it before.' As remonstrance was useless, I passed the instrument with some little difficulty, and drew off his water; upon which he jumped into bed, saying, 'God bless you, Doctor! but damn your physic.' In the afternoon when I saw him he was nearly free from inconvenience. Since that time I have always made it a rule to endeavor to pass a small gum elastic catheter in every case of what is called spasmodic stricture, or retention of urine. If it passes, so much the better; if it does not, the patient submits more cheerfully to the injection of a large quantity or repeated quantities of hot water into the rectum, and when the bowel is clear, and the hot water has acted as a bath to the neck of the bladder, to an enema composed of two grains of opium dissolved in two ounces of warm water. This will usually remain, and by its sedative qualities give effectual relief. If it should not, the same kind and quality of injection should be repeated every two or three hours, if the patient should not sleep until the urine begins to flow, with half a grain of the muriate, or acetate, or bi-mecenate of morphia, in a pill or draught.

"These are called cases of spasm, but they are cases of irritation, which induce a want of consent between the muscles of the parts, so that when the bladder contracts, the muscles surrounding the urethra will not act by yielding and dilating as they ought to do, but remain, or become more permanently contracted; in consequence of which the urine is forced against the inflamed and contracted part of the urethra, and by its irritation increases the mischief. When the water is drawn off, the desire to pass it is removed, and the greatest irritation on the inflamed or irritable part of the urethra

is thus taken away. When a person under these circumstances is restored to his usual state, and an examination is made of the urethra a few days afterwards, by an instrument of a fair size, but which the orifice will easily admit, it will be found to pass readily to the extent of from five to six inches in the greater number of cases, when it begins to cause a sensation, probably of pain, which was not experienced in the preceding part of its course. The surgeon is sensible of a resistance which is greater than might be expected, whether he uses a solid or a wax bougie, but which, after a little gentle pressure, yields, and the instrument passes into the bladder, without further inconvenience than its giving rise to a desire to make water. This is called overcoming a spasm; but it is a spasm which is always present, and not temporary. It cannot, therefore, be a spasm, the essential character of which rests on its being only of casual and temporary existence. What is called a spasmodic stricture is really no such thing, but a narrowing of the part, caused by its inability to dilate, and depending on some change in its vital elasticity. It is the first step in the formation of a permanent stricture, although its effects are augmented by the spasmodic action of such muscular fibres as may surround the urethra at the part affected."

OCCUPATION IN INSANITY.

At the recent anniversary of the Union Discipline Society in Boston, the following anecdote was related of a boy who was sent to the Brattleboro' Asylum, in a state of derangement. He told the physician he wanted work; he could not live without it. The doctor asked him what he could do? He could print—but they had no means of printing. "Well," he said, "the doctor could get work for him at the presses in the village." The doctor applied, but the printer said the boy would "knock the type all into pi." The doctor told the boy the result of his application. "Well," said he, "I should do no such thing; but, doctor, you can buy a press; it will cost but little." The doctor made the experiment, bought press and paper, and enlisted the insane to contribute, edited the "Monthly Asylum Journal," and sent it abroad. The boy printed it, improved rapidly, and has entirely recovered, — and in the last Journal returned his thanks to the community for this means of restoration.—*N. Y. Express.*

-THE
BULLETIN OF MEDICAL SCIENCE.

VOL. III.]

Philadelphia, September, 1845.

[No. 9]

On Febrile and Post-Mortem Caloricity.

[We introduce the analyses of Dr. Dowler's experiments, as made out by himself. These, in connection with our notice of his paper in the August Bulletin, will give our readers a tolerably full and fair view of this gentleman's investigations and opinions on the subject of febrile and *post-mortem* caloricity.—ED. BULL. MED. SCIENCE.]

ANTE-MORTEM SERIES. ANALYSES OF SUMMARIES.

*"Analysis of table No. 1, showing the primary period of yellow fever in persons that recovered:—*24 cases: mean time of illness when the observations were taken, 26·81 hours; mean of air 81·3°; mean of the hand 101·22°; maximum 107°; minimum 95°; mean of the axilla 103·11°; maximum 109°; minimum 102°.

*"Analysis of table No. 2, showing the temperature of yellow fever in the middle periods, in those who recovered:—*40 cases: mean time of illness when the observations were made 5·92 days; mean of the air 82·52°; mean of the hand 100·42°; maximum 107°; minimum 94°; mean of the axilla 103·11°; maximum 109°; minimum 97°.

*"Analysis of table No. 3, showing the temperature of the convalescent period of yellow fever patients:—*26 cases; mean time of illness when the observations were made 6·50 days; mean of the air 82°; mean of the hand 96°; maximum 100°; minimum 91°; mean of the axilla 98·46°; maximum 102°; minimum 83°.

"Analysis of table No. 4, showing
VOL. III.—25

*the temperature of the primary period of those who died of yellow fever:—*12 cases; mean time of illness when the observations were made 24·62 hours; mean of the air 83·75°; mean of the hand 102·54°; maximum 197°; minimum 97°; mean of axilla 105·91°; maximum 109°; minimum 100°.

*"Analysis of table No. 5, showing the temperature of the middle period of those who died:—*25 cases; mean time of illness when the observations were made 6·04 days; mean of the air 81·16°; mean of the hand 99·4°; maximum 106·5°; minimum 91°; mean of the axilla 103·39°; maximum 107°; minimum 99°.

*"Analysis of table No. 6, showing the temperature of the fatal stage of yellow fever:—*51 cases: mean time before death when the observations were made 16·01 hours; mean of the air 81·24°; mean of the hand 92·25°; maximum 104°; minimum 81°; mean of the axilla 99·56°; maximum 106·5°; minimum 90°.

POST-MORTEM SERIES.—ANALYSES OF SUMMARIES.

*"Analysis of table No. 1, showing the post-mortem fever of regions:—*43 dead bodies; mean time after death, when the observations began, 29·5 minutes; maximum delay in three cases 3 hours; minimum 1 minute; mean duration of the experiments 1 hour and 32 minutes; 4 maxima, being, 1 of 4 hours and 8 minutes, and 3 of 4 hours' duration: mean of the air 84·4°; partly taken in the dead-house, and the residue from other records; mean of the axilla

104.44°; maximum 109°; minimum 96°; mean of the thigh 104.71°; maximum 113°; minimum 100°; mean of the rectum 104.05°; maximum 111°; minimum 100°; mean of the epigastrium 105.48°; maximum 111°; minimum 101°; mean of the chest 102.95°; maximum 107°; minimum 97°; mean of the heart, generally of the right side, 103.5°; mean of the brain 98.71°; maximum 102°; minimum 95°. The chest and rectum are omitted in about half the cases, and the brain, perineum, pelvis, liver and heart, in a proportion somewhat greater. The liver was observed in nine cases, and gave a mean of 106.33°; a maximum of 112°, and a minimum of 102°. The perineum without incisions gave a mean of 104.45°; a maximum of 109°; and a minimum of 101°, in 10 cases. The pelvis and lower abdomen in 9 cases averaged 105.05°; maximum 107°; minimum 100.

"This table is sufficiently curious, but we utterly despair of showing from it by a comparison of organs at different periods, the surprising phenomena manifested by *post-mortem* fever, in particular regions remote

from the centre, at prolonged intervals after death, requiring hours to reach its maximum; then sometimes declining to the temperature of the centre, both keeping pace for a time, and then the centre falling more rapidly, leaving the thigh stationary, at perhaps 106°, for many minutes—reversing all the laws of refrigeration known to philosophers. So we leave this subject for the present.

"Owing to circumstances not necessary to mention, it often happened that the *post-mortem* fever had begun to decline—actual refrigeration had progressed upon the surface—before I commenced the observations. In selecting bodies, my preference was for those the most recently dead. When a body begins to refrigerate, of course the parts most distant from the centre will cool first. In this way the average of the thigh, great as it is, is more or less reduced, but I have not for that reason suppressed a single case. It will be seen that the thigh affords a maximum of 113°; exceeding every other region. Let us compare five maxima of the eight principal regions: in different subjects:

| Thigh. | Epigast'm | Axilla. | Chest. | Heart. | Brain. | Rectum. | Liver. |
|-----------|-----------|---------|--------|--------|--------|---------|--------|
| 113° | 111° | 109° | 107° | 109° | 102° | 111° | 112° |
| 109° | 110° | 109° | 106.5° | 106° | 101° | 109° | 109° |
| 109° | 109° | 108° | 106° | 105° | 101° | 107° | 108° |
| 109° | 109° | 108° | 106° | 104° | 100° | 107° | 107° |
| 108° | 109° | 107° | 105° | 104° | 99° | 106° | 106° |
| M. 109.4° | 109.6° | 108.2° | 106.1° | 105.6° | 100.6° | 108° | 108.4° |

"Analysis of table No. 2, showing the decline of *post-mortem* fever, or the incipient refrigeration of regions, the forerunner of putrefaction:—17 cases; mean time dead when the observations began 6 hours and 48 minutes; mean of the air about 86°; mean of the thigh 94.26°; maximum 103°; minimum 84°; mean of the epigastrium 97.5°; maximum 106°; minimum 84°. The following regions were not examined in all the dead bodies: mean of the lungs 94.28°, of the heart 93.25°, of the liver 96.5°, of the rectum 99°, of the axilla 96.88°, and of the brain 85.33°.

"Analysis of table No. 3, showing the period of refrigeration in which the body and sur-

rounding media coincide, very nearly in temperature, and in which putrefaction declares itself, accompanied by suppleness of the limbs, softness of the muscles, relaxation of the cornea, abdominal distention, green discolorations of the skin, and fetid gases:—19 cases; mean time dead 17.04 hours; mean temperature of room 84.39°; mean of the thigh 85.35°, of the epigastrium 88.11°, of the lungs 89°, of the axilla 86°, and of the brain 79.12°.

"The common opinion that putrefaction is accompanied or caused by an augmented heat in the human body, is quite erroneous, as we shall see hereafter.

"Since it is quite impossible, on the pre-

sent occasion, to relate the details in more than two hundred histories of temperature, I will attempt to give you a faint outline of several, omitting all minor matters.

"History 1st. — Highest temperature during life in the axilla 104 deg., 10 minutes after death axilla 109 deg., in 15 minutes the thigh gives 113 deg., 9 above the living maximum; in 20 minutes the liver gives 112 deg., in 1 hour 40 minutes heart 109; thigh, old incision, 109 deg., in 3 hours after removing all the viscera, a new incision in the thigh gave 110 deg., 6 deg., above the living maximum.

"Hist. 2d. — Alive; axilla 100 deg., hand 91 deg., dead 1 hour and 5 minutes; axilla, at the end of every 5 minutes, 102 deg., 104 deg., 107 deg., thigh 107 deg., 2 hours after death centre of the left lung 106 deg., apex 104 deg., heart 104 deg., thigh 106 deg., 3 hours, axilla 104 deg., liver 106 deg., thigh 106 deg., — repeated, 106 deg., rectum 105 deg.; 23 hours after death, room 90 deg., thigh 88 deg.; putrefaction developed.

"Hist. 3. — Last stage, hand 91 deg., axilla 100 deg.; dead 30 minutes, axilla 104 deg.; perineum, without incision, 102 deg., rectum 102 deg.; epigastrium 103 deg.; brain, through the orbit, 102 deg.; body appeared to be growing hotter, when demanded by friends for interment.

"Hist. 4th. — Last stage, hand 70 deg., (7 deg., less than the air); axilla 95 deg., about two hours after death, axilla 100 deg., rectum 104 deg.; axilla rose to 102 deg., epigastrium 101 deg., thigh 102 deg., brain 99 deg., heart and left chest 100 deg.

"Hist. 5th. — 2 days before death, hand 101 deg., axilla 104 deg.; 1 day before death, hand 100 deg., axilla 100 deg.; dead 5 minutes, axilla gave at different periods, and was still rising, 103-4-5-6 deg.'s., epigastrium 106 deg., brain 101 deg. and falling; the thigh 101 deg., though exposed to a cold wind, which sunk the mercury 10 deg., during the observations.

"Hist. 6th. — 4½ hours after death, thigh exceeded the brain 6 deg., the chest 3 deg.

"Hist. 7th. — Air cold (Oct. 26), mercury falling 3 or 4 deg.'s per hour: dead 1 hour, axilla 103 deg., nearly, liver 108 deg., and rising, brain 88 deg., falling; 2 hours after death, thigh 104 deg., left chest 97 deg.

"It is confidently believed that these outlines of a few cases, taken almost at random, will serve to illustrate the principal features which belong to the whole. I wish rather to avoid the extended history of morbid temperature, in the living body,

though here my materials are most ample, in order to give the more attention to its *post-mortem* phenomena."

"It will be seen on comparing the results of the two tables representing the convalescent and dying stages, that in the latter, the axilla is hotter, while the hand is colder than in the former, but in neither is the temperature elevated as in the early stage. Now this coincidence between the dying and the convalescent is *apparent*, perhaps not *real*. There can be no reason to doubt that the whole mass of the body discharges its morbid heat in recovery; on the contrary it recedes from the surface of the dying, now bathed in the dews of death, and concentrates upon the centre. Death takes place. The lungs and skin cease to refrigerate. The true fever no longer modified or repressed soon returns with its smouldering fires, until the heated mass, at last antagonized by the surrounding agencies, and its peculiar heat being dissipated and replaced, by mere physical heat, it falls under the domination of chemistry forever.

"Never were experiments made with greater fairness. I might have omitted with justice not a few cases where, probably, the *post-mortem* fever had declined before I had the opportunity of making the observations; yet with all these cases, tending to lessen the average temperature, the thigh and axilla of the dead rise to nearly the mean of 105 deg., each, more than 20 deg., above the mean of the air, more than 12 deg., beyond the mean of the hand in the last stage, almost exactly agreeing with the axillary mean in the first stage of the *ante-mortem* fever.

"The place where the *post-mortem* fever was studied was well adapted to produce speedy refrigeration; nearly all of one side of the room was composed of lattice-worked doors; the wind had free access to the body, which was placed on a stone floor, the corpse had no clothes on, or other covering than a linen sheet, which was generally removed.

"No explanation of the *post-mortem* heat can be drawn from the coagulation of the blood, the rigidity of the body, etc., since the heat existed when they were absent, and the contrary.

"It will be seen that the great nervous centre to which some ascribe animal heat, the brain, is in all cases the coolest part — the first to refrigerate, and the only one in which *post-mortem* fever never appears to any considerable extent, its maximum being 102 deg., less than that of the thigh by 11 deg.,

its mean 97.71 deg., exactly 6 deg. less than that of the thigh. Now this is the more remarkable as the brain from its great size, and from its being surrounded by a non-conductor, hair, ought, *a priori*, to yield its heat by contact and radiation more slowly than any other organ.

"These experiments are quite sufficient, if I may be allowed to judge, to overthrow the doctrine which ascribes the origin of animal heat solely to respiration. Take, for example, the following outline of a single case; dead 2 hours 30 minutes; experiments 3 hours and 59 minutes: air 86 deg., axilla 109 deg., rectum 107 deg., perineum 109 deg., pelvis and abdomen 107 deg., liver 107 deg., epigastrium 105 deg., chest and heart each 102 deg. Virey says that the lungs constitute the only bed of the animal heat, yet, except the brain, this bed of heat is the coolest organ between the knee and the crown of the head, its maximum being 106½ deg., that is 6½ deg. less than the thigh, and its mean 102.95 deg.

At the decline of the *post-mortem* fever, or at the period of incipient regional refrigeration, the thigh gives a mean of 94.26 deg., the lungs a mean of 94.28 deg.; at the period of incipient putrefaction, the mean of the former is 85.35 deg., that of the latter, 69 deg. In but 4 cases, however, soon after death, have I found the *post-mortem* fever as high in the lungs as in the thigh; while in many cases the latter was vastly hotter."—*West. Journ.*

ON THE PRESENCE OF TUBERCLES IN DIFFERENT ORGANS.

(Translated for the Medical Gazette.)*

The following results, obtained by M. Cless, of Stutgard, from the examination of upwards of 160 bodies affected with tubercular disease, are interesting as showing the comparative frequency with which different organs and parts become the seat of tubercular deposit; they are also especially valuable when taken in conjunction with the observations of M. Louis, Barthez and Rilliet, and others, most of which they confirm by additional evidence.

In 152 autopsies of adults affected with tubercles, M. Cless found the lungs free from tubercles six times. In two of these six cases the peritoneum was sprinkled with tubercular granulations; in one the pulmonary and costal pleura of the right side were affected; in one the bronchial glands, mesentery, and lower part of the ileum, were the seat of the tubercular disease. In the 5th

case the pleura and the peritoneum were sprinkled over with tubercles of various sizes, from millet-seeds to peas, densely packed together; there was also tuberculous matter in the glands of the neck and chest, liver and spleen; the lungs, compressed by effusion into the pleural cavities, were perfectly free from tubercles. In the 6th case there was tuberculous matter in the bronchial glands. In 21 autopsies of children, he only found the lungs free from tubercles once; this was in a boy 11 years of age, who, besides a considerable serous effusion into the ventricles of the brain, had two large masses of tubercle in the cerebellum, many small ones on the surface of the liver, and caries of the vertebrae.

In 146 adults affected with tubercles in the lungs, there were only 35 in whom the disease was confined exclusively to the lungs; in the remaining 111, or nearly three-fourths of the whole, the disease had extended to other organs. In children, the proportion in which the deposit of tubercles is limited to the lungs is smaller than in adults, M. Cless finding only three cases out of twenty in which all other organs were free. Barthez and Rilliet* state the proportion to be 23 to 269. In 166 cases (adults and children) of tubercular deposit in the lungs, there were only thirteen in which the disease was confined to one lung; of these, in ten cases it was the right lung, in three the left: it is true that in the greater number of cases the disease had not advanced very far. When both lungs were affected, the right was usually the most diseased, the proportion being 45 to 30; this result is not in accordance with the observations of Louis and others. In 146 adults, in whom the lungs were diseased, vomicae were found 105 times, there being none in the other 41 cases; in children, the proportion in which vomicae existed was smaller, there being only nine cases out of twenty in which they were found; usually, the younger the child is the less frequent is the occurrence of vomicae; the very young ones most commonly sink under an acute tubercularization which causes death before passing on to suppuration; moreover, young children are frequently carried off by other diseases superadded to the tubercular deposit, such as acute hydrocephalus, &c. Out of 166 cases, pneumothorax, from rupture of a vomica, was noted as occurring four times, twice in the right lung, twice in the left. M. Cless relates two exceptions to the established rule that the usual seat of tubercles is at the summit of the lungs; in these two cases the disease

* Gazette Médicale, Jan. 1845.

* Maladies des Enfants, tom. iii., p. 49.

affected the lower lobe especially, and in one there even existed a vomica.

Tubercles in bronchial glands.—M. Cless never found the bronchial glands in children affected with tubercular deposit without the existence of tubercles in the lungs also. These glands were not always examined in adults.

Pleura.—In 13 adults and one child there were tubercles in the pleura. In one the pleura alone was strewed over with plates of tuberculous matter, the parenchyma of the lungs being healthy; in another case, in which the lungs were equally healthy, there were tubercles in the pleura, peritoneum, and bronchial glands. In three other cases the pleura and peritoneum were covered with tubercles, and there was a small quantity in the lungs. Three times tubercles of the pleura accompanied an ordinary pulmonary phthisis; and six times the tuberculization was general. The patients, of whom 11 were males and 2 females, had the following ages: 6 were between 20 and 30, 5 between 30 and 40, 1 at 42, 1 at 59, and 1 child aged 10.

Peritoneum.—In 16 adults and 4 children, the tubercles were limited to the peritoneum eight times; they predominated over those in the lungs six times, and in six other cases the disease was general. The four children were between six months and 10 years of age. Among the adults, 11 were males and 5 females; 2 were under 20 years of age, 5 were between 20 and 29, 5 between 30 and 39, 2 between 40 and 49, and 2 between 50 and 59. The tubercles were in no part so numerous as in the peritoneum, the whole surface of which was sometimes covered with them; and, according to M. Cless, they frequently offer, in this part, a peculiarity which is not found in the tubercles deposited in other parts of the body, that is, a black areola surrounding their base, probably from the existence of a black material in the capillary vessels. Once only did M. Cless find the mesenteric glands affected with tubercles coincidently with their occurrence in the peritoneum.

Pericardium.—In one individual only, whose lungs, pleura, bronchial glands, and spleen, contained tubercles, were there found any in the pericardium; and in this case they were scattered over its whole surface.

Intestines.—In 152 adults affected with tubercles, the small intestines were affected 83 times, and the large intestine 37 times; and in 21 children the small intestines were affected seven times, the large ones only once. Never were there found tubercles in

the intestines without there being some also in other organs. Between the ages of 20 and 30, the intestines were most frequently found diseased.

Mesenteric glands.—Among 152 adults, 32 had tubercles in the mesenteric glands; 7 out of 21 children also had the mesenteric glands affected with tubercles. In all the cases tubercles were found in other organs.

Liver.—Once in an adult, twice in children; other organs were affected.

Spleen.—4 adults and 12 children; always with tubercles in other parts of the body. In children, the parenchyma of the spleen is often quite invaded by tubercles.

Kidneys.—4 adults and 3 children.

Uterus, fallopian tubes, and ovaries.—In 26 women who died of pulmonary phthisis, tubercles were found in the genital organs; once in the walls of the uterus, once in the peritoneal covering, twice on the internal surface of the uterus, once the whole substance of the uterus was converted into tuberculous matter, twice the ovaries were the seat of tubercle, and four times the fallopian tubes were filled with tubercular substance. The tubercles in the genital organs were always secondary to the general tuberculization, especially occurring where the abdominal viscera were the seat of disease.

Brain and its membranes.—Of 5 children aged from 8 months to 11 years, in whom the membranes of the brain presented tubercles, 4 died of acute hydrocephalus. In all there were tubercles in the lungs and other organs also. The tubercular granulations had always their seat on the external surface of the arachnoid, between this membrane and the pia mater, never within the cavity of the arachnoid. In an adult who died of acute hydrocephalus, there were found, besides a large quantity of limpid serum in the ventricles, pus and many tubercular granulations between the arachnoid and pia mater, tubercles in the lungs and pleura, and in Peyer's glands. In 27 children who died from tubercles, four had tubercles in the brain, as also in other organs; M. Cless never found any in the brain of adults. Besides in the mesenteric and bronchial glands, M. Cless found tubercles in the glands of the neck in five adults and one child; he also found them in the pelvic and other lymphatic glands; but in all cases tubercles were found in other organs also. Twice he found tubercles in the muscles, six times in bones, and once in an articulation alone.

ON THE USE OF SEA WATER IN SCROFULOUS AFFECTIONS.

To the Editor of the Medical Gazette.

Sir, — Several years have elapsed since a paper of mine appeared in the Medical Gazette, "On the Internal use of Sea Water," and it is my wish on the present occasion to draw the attention of the profession to its value as a remedy in scrofulous affections. We all know the obstinate nature of these complaints, and how little they are under the control of ordinary treatment: it is therefore with real satisfaction that I introduce to their notice a remedy, which, so far as my own limited experience extends, has proved most satisfactory; I cannot arrogate to myself any merit in having made a discovery, as the inhabitants of this coast have from time immemorial employed it in this disease, and therefore the utmost that I can lay claim to is having tested its virtues, and, perhaps, of having ascertained the most effectual mode of employing it; and this consists in the combined use of sea water, both internally and externally, either in the form of tepid baths, or cold sea bathing, — the circumstances of each individual case must decide which of them is preferable; but it will generally be found advisable to begin with tepid baths, and then at the end of two or three weeks to resort to cold sea-bathing.

Treatment. — As soon as the patient rises in the morning, to drink sea-water, mixed with an equal portion of warm spring water; the quantity of sea water required by an adult, to act freely upon the bowels, is generally from eight to twelve ounces, and a smaller quantity for children, according to their age; but of course it will be necessary to vary the dose, according to the constitution of each individual, only taking care that it operates sufficiently: after this is over, which will generally be soon after breakfast, the patient may then bathe, either in the tepid bath, or sea, as may have been decided upon: the patient must not take milk for breakfast, as it combines readily with the muriatic acid of the sea water,* and makes the patient shivery and uncomfortable the whole day, and unfit to bathe, as reaction will not take place. This plan may be continued for many weeks, without intermission, unless the patient appears to be re-

duced by it; but, in general, the patient gains both strength and appetite; nevertheless, I have been in the habit of resting a few days at the end of each fortnight, and then commencing again, although I have no certain proof that this is necessary.

I need not point out how in this plan the whole system must be saturated with the constituents of sea water, that portion which is taken internally, carrying off the watery particles of the blood, raising the temperature of the body, increasing the action of the heart, and rendering the blood more florid; under these circumstances, the skin is prepared to absorb with avidity the fluid into which it is immersed, and it is then conveyed through all the tissues of the human body.

Under this discipline, scrofulous tumors are absorbed, and scrofulous ulcers heal more speedily and more certainly than under any other mode of treatment with which I am acquainted: and we may fairly presume that tuberculous deposits are removed in a similar manner, although we have no means of demonstrating the fact.

In what manner the sea water acts upon the disease it is perhaps difficult to determine; to the iodine contained in it we are probably partly indebted, but I believe it is chiefly attributable to the saline properties imparted to the blood, a deficiency of which having rendered the solution of the albumen imperfect, it became deposited in the various tissues which were intended only to secrete the more watery particles.

The best application to the tumors and ulcers during the above treatment, is to keep them constantly covered with the green sea moss, moistened with sea water, and the diet should comprise a good allowance of animal food, but all sorts of stimulants should be carefully avoided. I shall probably return to this subject in a future communication. — I remain, sir,

Your obedient servant,

EDWARD GREENHOW.

FREQUENCY AND CAUSES OF PERICARDITIS.

On the Frequency, and on some of the Causes of Pericarditis, with incidental observations on the frequency, and on some of the causes of various other internal inflammations.

By JOHN TAYLOR, M.D.,

Professor of Clinical Medicine in University College, and Physician to University College Hospital.*

Frequency of Pericarditis. — The author

* [The fact may be as stated by our correspondent, but we may observe that there is no muriatic acid in sea water, and we do not see how the neutral alkaline chlorides which it contains, can have any chemical action upon milk. — Ed. Gaz.]

* Proceedings of the Royal Medical and-Chirurgical Society. Tuesday, June 24th, 1845. J. Taylor, President, in the Chair.

has found one case of severe pericarditis, as distinguished from the very slight forms of the disease, to occur in about every eighty of the physicians' cases in University College Hospital.

Pericarditis was four times as frequent in the fatal cases as in all others taken indiscriminately, for it was found sixteen times in the bodies of 355 patients, in all of which the heart was examined; old adhesions of the pericardium were found in one out of every sixteen bodies, and white spots or patches in one out of every four bodies.

Causes of Pericarditis. — The causes were examined in thirty-five cases of the more severe forms of the disease; nearly two-thirds occurred in the progress of acute rheumatism, and nearly one-third in connexion with Bright's disease. Besides these causes, the author has found the following only, viz., extension of inflammation from the pleura in one case, and from the liver and diaphragm in another. A third case occurred in connexion with cyanosis and malformation of the heart.

Nearly all the cases occurring in persons previously in good health were found to be associated with acute rheumatism, whereas nearly all those occurring in persons in bad health were complicated with Bright's disease.

The author has observed some form of morbus cordis in about half the cases of acute rheumatism which he has treated in University College Hospital. Pericarditis of considerable severity occurred in about one in twelve cases, which proportion is nearly the same as that found by various writers, with whose observations a comparison could be made.

Valvular Disease was found in about half the cases of rheumatism. This amount is nearly the same as that observed by various authors, but most writers state, or imply, that these cases were examples of *recent endocarditis*, and consequently they make endocarditis to be very much more frequent than pericarditis in rheumatism. The author of the present paper is uncertain how many of his cases of valvular disease were recent. He believes that the diagnosis between acute endocarditis and old valvular disease in acute rheumatism, is in many cases impossible, and in a large proportion doubtful. He has found signs of valvular disease which he supposes to be of old standing, in all physicians' cases taken indiscriminately, in a proportion so nearly approaching to that found in cases of rheumatism, that he considers the greater number

of cases of valvular disease found in rheumatism, to be of old standing, and that the frequency of acute endocarditis has been over-rated, and perhaps does not much if at all exceed that of pericarditis.

With respect to the circumstances under which cardiac inflammation appeared in rheumatism, the author found that metastasis occurred in none of his cases — the rheumatism was of the *fibrous* variety, as distinguished from the capsular, in every instance; pericarditis was not more frequent, but it was more intense and more fatal in severe than in mild cases of rheumatic fever. The heart was more frequently affected in the early stage of this disease in young subjects, and in a first attack, than in the opposite circumstances. Venesection had nothing to do with the production of inflammation of the heart in any case. Some writers appear to think that pericarditis hardly ever occurs except in connexion with rheumatism; others believe that the causes are in many cases unknown. The author has found a satisfactory cause in every case, and he believes that the two grand causes are acute rheumatism and Bright's disease. Both these appear to produce inflammation of the heart and of other organs in the same way ultimately, viz., by a morbid state of the blood; we may expect therefore to find pericarditis in connexion with other blood diseases, such as the eruptive fevers, typhus, erysipelas, &c. Instances of this kind are recorded, but the only case belonging to this class seen by the author was one of pericarditis with *cyanosis*.

Pericarditis has long been known to occur occasionally as one of the secondary inflammations produced by Bright's disease; but the frequency with which it is met in these circumstances appears not to have been hitherto suspected. The author believes that Bright's disease in its advanced stage has as great a tendency to produce inflammation of the heart as acute rheumatism has. It is true that acute rheumatism was more frequently the cause of the pericarditis in his cases than Bright's disease, but this may be due to the greater frequency of rheumatism than of Bright's disease. From a comparative examination of fifty bodies in which advanced disease of the kidney was found, and of 142 bodies in which there was no disease of the kidney, the author found that acute pericarditis was met with in one in ten of the former, and in one in thirty-five of the latter class, and that acute endocarditis was met with in one in twelve of the former, but only in one in seventy-one of

the latter. Hence it appears that inflammation of the heart was much more common in cases with, than in those without renal disease; and also that acute pericarditis was met with as often in cases of advanced Bright's disease, as in cases of acute rheumatism. — *Med. Gaz.*

FRENCH ACADEMY OF SCIENCES.—
JUNE 2.*

ACTION OF SALIVA ON FECULA.

M. LASSAIGNE communicated the result of new observations on the action of saliva on the granules of fecula at the temperature of mammiferous animals, and on the state in which starch exists in the grain of the cerealia after being masticated:—

1. Starch in the state of aggregation, wherein it exists in alimentary substance that contain it, is not altered by the saliva at the temperature of mammiferous animals.

2. During the mastication of amylaceous grain, the starch is not disaggregated by the teeth, as some physiologists suppose, and consequently starch cannot be converted into dextrine during the series of organic actions which precede stomachal and intestinal digestion.

3. The metamorphosis of starch into dextrine cannot occur in the horse, not only because the globules of starch remain intact in masticated and swallowed corn, but because, even if they were broken up by the molar teeth, the saliva of the horse could not act on them as human saliva does.

4. Human saliva, which exerts no action on raw granulated starch at the temperature of 38 C. (100 F.), acts on disaggregated starch even at the temperature 18 C. (64 F.) and 20 C. (68 F.), which it converts in less than twenty-four hours, partly into dextrine and partly into glucose, the lacerated integument which formed the envelope of the amidon still retaining the property of being coloured blue by iodine.

June 16.

RESEARCHES ON WOUNDS OF BLOOD-VESSELS. BY
M. AMUSSAT.

M. AMUSSAT, before stating the conclusions to which his experiments have led him, pointed out the difference between the method he pursued and that followed by former experiments. Hitherto the vessels experimented on had been always isolated from the adjacent parts, but he always inflicted a simple open wound, without any previous dissection, so as to place the animal operated on in exactly the same position as a man who receives a wound. M. Amussat's conclusions are as follows:—

1. The spontaneous clot that plugs a completely divided artery in a large transverse

wound forms very quickly, in fact under the eyes of the experimenter.

2. This clot consists of the fibrin of the blood, and is supported by the external cellular coat of the artery or the fourth membrane, and not by the sheath of the vessel, as would appear to be the case from a superficial examination and the ordinary description of the structure of arteries.

3. The central cavity in the spontaneous clot affords an important character for the discovery of an artery marked by a clot.

4. Contrary to the opinion of Jones, Beclard, &c., an artery possesses in itself the power of arresting hemorrhage, or a clot may form at the extremity of an artery, projecting from the surface of a wound.

5. The clot is larger and firmer, the tenser the artery and the cellular membrane were at the moment of its division. The practical deduction from this fact is, the necessity of putting arteries considerably on the stretch, so as to place them in circumstances favourable for the formation of firm clots almost analogous to those formed in arteries lacerated by avulsion.

6. Some of the results may, perhaps, be valuable in a medico-legal point of view. Thus, if both carotid arteries are transversely divided together in a living animal whose spinal marrow is uninjured, clots always form in the cardiac extremities of the arteries, which are bulky in proportion to the greater or less tension of the neck and of the arteries at the moment of their division.

7. On the contrary, if the carotid arteries are severed one or two minutes after an animal has been killed, either by a blow on the head, by simple division of the spinal marrow, by strangulation, or by asphyxia, clots do not form in the cardiac extremities of the carotid arteries; or if they do form, they are small and quite unlike those that occur in vessels which are divided in a vigorous living animal that dies of hemorrhage.

8. It is therefore of the utmost consequence to examine the cardiac extremities of divided arteries in certain medico-legal cases; as we can thence conclude with much more certainty than from an examination of the other soft parts, whether they are divided during life or after real or apparent death.

CYANOSIS OF NEW-BORN INFANTS.

Dr. MEIGS, Professor of Midwifery in the College of Philadelphia [Jefferson Medical College], read a note on this affection, in which he says the child dies from the presence of dark non-oxygenated blood in the brain, where its presence is hurtful, not because it acts as a poison, but simply because it is incapable of exciting the motions of innervation in that organ. It is useful to know the universally known fact that the foramen ovale is

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* Dublin Medical Press.

the inter-auricular valve, which is thin and floating, it occurred to Dr. Meigs to place the cyanosed child on the right side, with the head and trunk somewhat raised, so that the inter-auricular septum should be maintained horizontal, and the blood contained in the left auricle should press with its whole weight on the closed valve. Dr. Meigs has frequently seen the blue colour disappear at the very instant the infant was placed in this position, proving that oxygenated blood only entered the arteries.

Dr. Meigs stated that he had thus saved the lives of fifty or sixty children in one hundred : whereas, as is well known, all the means hitherto tried have failed.

FORMATION OF FAT.

M. BOUSSINGAULT's new researches on this subject seem to establish — 1. That pigs, eight months' old, fed in the usual way, contain considerably more fat than they have ingested in their food. 2. That pigs fed for six months on potatoes do not produce more fat than is contained in the potatoes eaten. 3. That during the fattening of pigs, there is much more fat assimilated than exists in their food. 4. That food which, when eaten alone, does not possess the power of generating fat, acquires that power to an astonishing extent, when joined with fat, though fat, given alone, produces inanition. 5. That fattening aliment, which contains but a small quantity of fat, always abounds in nitrogen.

M. Boussingault's experiments confirm the fact, — first observed by M. Persoz, — that during the fattening of a goose, the quantity of fat generated greatly exceeds the oil contained in the maize eaten.

M. Boussingault ascertained the rapid influence of ready formed fat in advancing the fattening of animals in the following way. Ducks were fed on rice, which contains an extremely small quantity of fat; other ducks of the same weight and brood had the same quantity of rice mixed with a little butter. The former ducks remained as thin as when the experiment commenced : the latter became in a few days remarkably fat. M. Boussingault always found the production of muscular flesh accompany the production of fat.

M. MILNE EDWARDS remarked on the correspondence between M. Boussingault's new experiments and those which he (M. Edwards) had recently communicated to the Academy, to the effect that bees fed exclusively on sugar produced no wax; while bees fed on honey did produce wax, though the quantity of wax generated greatly exceeded the quantity of wax contained in the honey consumed.

TREATMENT OF FISTULA LACHRYMALIS AND CHRONIC EPIPHORA BY CAUTERIZATION OF THE LACHRYMAL DUCT, AND EXTIRPATION OF THE LACHRYMAL GLAND.

M. PAUL BERNARD proposes to treat the foregoing affections by applying a more or less concentrated solution of nitrate of silver to the

lachrymal passages. Cases of simple lachrymal tumour are thus cured in two or three weeks; when fistula exists the treatment is the same, but occupies a longer period.

The lunar caustic is applied for the purpose of modifying the tissues, much rather than with the view of obliterating the lachrymal sac or duct, as was attempted by Nannoni, Delpech and others. If, however, such obliteration does occur, and is accompanied by epiphora, M. Bernard does not hesitate to extirpate the healthy lachrymal gland; which he maintains can be removed without any injury to vision. M. Bernard claims the following advantages for his mode of treatment : —

1. A more rapid, a more certain, and a more durable cure than can be accomplished by mechanical means, and which is usually accompanied by a depressed cicatrix or any other visible deformity.

2. Facility of execution.

3. The pain and inconvenience of the proceedings are trifling.

4. The practical results are very satisfactory.

NEGATIVE INFLUENCE OF THE CEREBRO-SPINAL FLUID ON LOCOMOTION. BY M. LONGET.

M. LONGET communicated a notice of some experiments relative to the abstraction of the cerebro-spinal liquid and the influence of the posterior cervical muscles on locomotion, by which he proposed to point out an error and to establish a fact. It is generally admitted by physiologists for twenty years past, that the evacuation of the cerebro-spinal fluid disturbs locomotion remarkably. The method pursued to evacuate the cerebro-spinal liquid has been to open the dura mater and the arachnoid, between the occipital bone and the atlas, after having divided the soft parts covering the occipito-atloid space. When the liquid is evacuated and the animal is let loose, it staggers, it is said, as though it were intoxicated. M. Longet divided the soft parts down to the occipito-atloid ligament, which latter structure was left intact, and consequently *without evacuating the cerebro-spinal fluid*, in the horse, the dog, and the rabbit, the animals were placed in the horizontal position, and to M. Longet's astonishment, he observed precisely the same disturbance of the functions of locomotion, the same unsteadiness in walking which had hitherto been always attributed to the abstraction of the cerebro-spinal fluid. A counter experiment, by evacuating the cerebro-spinal fluid without dividing the muscular and ligamentous tissues of the back of the neck, was necessary to test this result. M. Longet removed one of the vertebral laminae in the middle of the dorsal region. After the operation there was some weakness in the posterior extremities, in consequence of the muscular wound, but this weakness was in no degree increased by the evacuation of the fluid, and moreover the animals did not present any of the peculiar and very characteristic staggering observed in the other series of experiments in

which the soft parts of the back of the neck were divided.

M. Longet concludes from these experiments — 1. That an important influence over the functions of locomotion has been erroneously attributed to the cerebro-spinal fluid, which, in point of fact, exerts no such influence. 2. That the division of the muscles and ligamentous tissues of the nucha causes animals to stagger, as though they were drunk; and that the effects attributed by previous experimenters to the abstraction of the cerebro-spinal fluid arose from the division of those parts—*Gaz. Med. de Paris*.

DE LUNATICO INQUIRENDO.*

The following is the medical evidence in a case of this kind. It is amusing from the difference in opinion expressed by one of the witnesses as to the sanity of the party under trial. That there were "many men in court much more mad" we are convinced, or if not as mad, at least as foolish. The dome of the Four Courts we take to be like the steeple of a church. The lawyers are as much indebted to long tongues and empty heads for the noise they make as are the church-bells for their chimes. But, then, if the lawyers be mad, there is a method in their madness. Unlike mad doctors, they have always an eye to business, and never fail to work, tearing each other to pieces, *pro bono publico*. We never yet saw a mad doctor, and we have seen enough of them, whose insanity did not display itself in efforts to destroy his own profession, his brethren, and the institutions to which he belonged;†—

"A commission *de lunatico inquirendo* was held on the 4th inst., in the Bankrupt Creditor Chamber, Four Courts, before James Dwyer and Francis Beatty, Esqs., Commissioners of Lunacy, 'to inquire into the state of mind of Thomas Carpenter, son of the late Alderman Carpenter of the city of Limerick, and to ascertain whether he was an idiot, lunatic, or person of unsound mind, and if so, when he became so; whether or not he be possessed of any property, real or personal, and if so how much, and who were his heirs and next of kin.'

* Dublin Medical Press.

† We are proud to be able to say that this remark does not apply to the body of "mad doctors" on this side of the Atlantic.—ED. BULL. MED. SCIENCE.

"Dr. Kirby examined—I know Thomas Carpenter (identifies him); I saw him in my capacity of a medical man about the year 1843; he was then in the Richmond Asylum; I was called in to see him, and I remained about forty minutes; having at the end of that time a doubt as to his sanity or insanity, I therefore proposed to see him again, and when I did so he showed me a document addressed to every person in office, from the Lord Lieutenant down to the lowest public officer, to effect his liberation; I read it through, and I at once saw that it was the effusion of a disordered intellect; and his conduct, when I questioned him, fully bore me out; I went to him to give a certificate of his sanity, if possible, but I could not do so from what I saw of his deportment; he was, I believe, insane, and perfectly incapable of managing his affairs—that is, generally speaking, all the affairs of life.

"Mr. Carpenter—Upon what did you ground your belief?

"Dr. Kirby—Upon the heading of that document, its contents, and your demeanour.

"Mr. Carpenter—It was a mere draft of a petition addressed to the authorities.

"Dr. Kirby—It was addressed to the Lord Lieutenant, the Commander-in-Chief, Judges, &c.

"Mr. Carpenter—It was, and I beg to refer to it; I remember the interview with Dr. Kirby very well, and I must say that if I was excited, he was excited also, and more so than I was.

"Dr. John Mollan examined—I have known Mr. Carpenter since 1838, and I believe him to have been since that time, and at this moment, of unsound mind; he is perfectly sane on many points, but he is insane on others—such as believing that his wife's family are in a conspiracy to deprive him of his property; he has frequently threatened me and others, stating if he lost his life I should be tried for murder; I consider him capable of managing any property he may have but his late wife's property, for he is sane on all matters except that; and as to that, he speaks of the illegality of the proceedings in the Ecclesiastical Court, and of his getting them set aside.

"To a juror—He was kept in the ward set apart for the most convalescent patients.

"Commissioner Beatty—Was he ever in the refractory ward?

"Dr. Mollan—He was once.

"Mr. Carpenter—I was for fifteen or twenty minutes, just after I was brought there.

"Dr. Mollan — Yes, that is the case; and I should say that it is usual to put patients there when they first go in, in order to see what is their state of mind.

"Witness to Mr. Carpenter — You said that you would abide by legal opinion when speaking of your affairs? I sanctioned you in writing to the board of the asylum to be liberated and allowed to go to the continent and arrange your affairs, but by that sanction I did not mean to say that you were of sound mind on all points. I agreed with Dr. Jackson in a recommendation of that kind, but I did not think you were perfectly sane.

"To a Juror — He would be capable of attending to his affairs if he did not interfere with his wife's property, which he is so anxious to get out of custody about. If he was discharged, and interfered with it, he would certainly become very violent, as he always does when the question is alluded to.

"Dr. Charles O'Reilly examined — I attended Mr. Carpenter on three occasions, in the year 1843, to inquire into his state of mind; on my first two visits, I thought he was perfectly sane, and was so much of that opinion that I was almost inclined to give him a certificate to that effect, but on the third occasion I had reason to change my opinion materially; I then told him I would be happy to examine him and communicate with him in the presence of Drs. Harty and Mollan, upon which he grew very violent, stamped his foot, and said, 'Hell itself would be preferable to the ordeal I wished to put him through.'

"Mr. Carpenter — Did I not, doctor, on your first visit show you a certificate of Dr. Burke's as to my sanity?

"Witness — You did.

"A Juror — Was that gentleman one upon whose certificate reliance could be placed?

"Witness — I would be cautious as to relying on it.

"Commissioner Dwyer — Is that the late Dr. John Joseph Burke, of Cranby-row?

"Mr. Carpenter — Yes sir.

"Commissioner Dwyer — He was a very respectable and competent professional gentleman.

"(The certificate alluded to was here produced by Mr. Carpenter, and identified by the witness. It was dated 12th April, 1840, and Dr. Burke in it testified to the perfect sanity of Mr. Carpenter, whom he stated he knew for twenty years previous.)

"A Juror — Upon what did you found your opinion of the state of mind on the third visit?

"Witness — I founded it on the excited state I found him, and the manner exhibited in his conduct; his extreme caution, and the intensity of his delusions when I alluded to his wife's property.

"Dr. Blood examined — I am surgeon to the Richmond Lunatic Asylum; I know Mr. Carpenter, and have known him for about four years; I can form an opinion of his state of mind, and have had considerable doubts about his case, and I would not swear that he was not of sound mind; however I have heard acts of his, which, if true, leave no doubt on my mind but that he is of unsound mind; I know of none of those matters of my own knowledge.

"To Commissioner Beatty — Mr. Carpenter has often been in violent fits of passion, when he supposed that we were improperly detaining him.

"A Juror — And very naturally so.

"Witness — I can't say he is unable to manage his own affairs, or is of unsound mind at this moment.

"Mr. Commissioner Dwyer — Have you any professional gentleman here?

"Mr. Carpenter — I have not.

"Mr. Commissioner Dwyer — Would you wish to have one?

"Mr. Carpenter — I certainly would, for I had no opportunity of seeing one, and no money to pay him.

"Dr. Field examined — I have known Mr. Carpenter for about twenty years, and during the latter part of my acquaintance with him I considered him insane; on one occasion, I think in or about 1824, I called on him at Montpelier-parade, and he assaulted me and knocked me down; I called to see him by his own directions, and when I got in he chained the door, and struck me with a stick, before doing which, he said — 'Is that you, Dr. Field.'

"To Commissioner Dwyer — This occurred after dinner, but I saw no signs of drink upon him.

"Dr. Robert James Graves was examined as follows; (certificate produced) — That is my handwriting.

"The following is a copy of the certificate:—

"30th October, 1843.

"I have conversed with, and carefully examined, Thomas Carpenter, now confined in the Richmond Lunatic Asylum, and I am of opinion that he is of sound mind and ought to be liberated.

"ROBERT JAMES GRAVES."

"Examination continued — I was call

on to examine Mr. Carpenter in 1843, and I did not then think he should be confined in a lunatic asylum; I have not examined him lately, but he does not now appear to me to be a fit object for an asylum; he does not look like a person incompetent to manage his own affairs, but I won't swear he is competent.

"Counsel submitted that there should be a postponement of the investigation, in order to allow his client's case to be properly brought forward, and to have Mr. Carpenter examined by Dr. Graves.

"Dr. Beatty thought it was not at all necessary, as the jury were enabled to form an opinion after the view which they had had of Mr. Carpenter during the previous day's proceedings.

"A Juror (Captain Osborne) stated that he thought there should be an opportunity given to Dr. Graves on more than one occasion to examine Mr. Carpenter, as the question to be decided was one of such importance that it should not be hurriedly passed over or decided on.

"Examination of Dr. Graves continued—Mr. Carpenter might have written and published that document when insane, and now be perfectly sane; I considered him sane when I visited him, and I considered it a case of great cruelty to keep a gentleman who appeared sane, or about whose sanity there was a doubt, in custody, in filth, and in rage, as Mr. Carpenter was kept.

"To Mr. Gibton—It is very difficult to say that I would have given that certificate if I had heard Mr. Carpenter had threatened the Archbishop and others with 'Sneyd's' fate, and stated his determination to have blood, but a man might be mad one year and quite sane the next.

"Commissioner Dwyer—And Dr. Graves examined him in 1843, while those threats were sworn to have taken place in 1837 or 1838.

"Dr. Graves—*My opinion is, that there are many men much more mad walking about attending to their business, and in this court perhaps* (laughter).

"Mr. Carpenter to the jury—I would take my money out of bank if properly advised to do so by counsel, but I would not do so without advice. If a proper case was laid before counsel, and I got advice to draw the money I would do so, otherwise I would not.

"Mr. Carpenter then concluded his case by reading several documents to show that he could not be of unsound mind; after which

"Mr. Commissioner Beatty summed up the case to the jury, who returned a ver-

dict—'That Mr. Carpenter had been of unsound mind since January, 1837.'"

THE HISTORY OF A CASE OF CHRONIC ULCERATION OF THE DUODENUM, AND PERFORATION.

By WILLIAM JOHN LITTLE, M.D.

Physician to the London Hospital.

J. Somers, Esq., M.P., aged 57; a person of firm and vigorous mental and bodily constitution, whilst engaged at the House of Commons, at about a quarter past one P. M. on Tuesday, June 24th, 1845, was suddenly seized with intense pain in the abdomen. He immediately quitted the House and returned to his residence, about six miles distant, in a cab, calling on the way at a chemist's for a dose of medicine, to relieve the intense agony under which he suffered. He was seen by Mr. New, surgeon, and myself within an hour of the seizure. Subsequently, he was visited by Dr. Farre. On my entering his apartment, he was sitting at the edge of the bed, the right foot resting on a stool, one hand applied to the epigastrium, and the other supporting his head. This position was preferred throughout his illness, until he became exhausted. When questioned, excruciating pain, increased by pressure, was the sole subject of complaint, at first principally referred to the region of the ascending colon and epigastrium; afterwards, to the left side of the umbilicus. The patient's manner was calm and quiet; the surface of the body cold, face pale, features compressed; pulse 60, soft and regular; tongue moist and pale. This state of depression continued, with little change, during several hours. Towards evening the pulse became fuller and quicker, and the skin warmer, though short of complete reaction. The tenderness at the epigastrium predominated over the pains at the other parts of the abdomen. The patient evinced a horror of the slightest touch at one particular spot in the epigastric region, to which he pointed with a single finger. He was averse to taking either food or drink, and particularly objected to warm or stimulating fluids, stating, after he had swallowed a small portion of weak brandy and water, that "it would burn him alive." Rinsing the mouth with cold water appeared grateful. Opium seemed to blunt the exquisiteness of the suffering, but the patient did not experience a moment's ease.

During the night he became more restless.

At daybreak, the increased coldness of the hands, the sunken features, and the small-

ness and frequency of the pulse, too surely indicated the approach of a fatal termination of the case. During the forenoon of the 25th, the perceptions became impaired, although he continued sensible until within a quarter of an hour of his dissolution, which took place shortly after one o'clock, P.M., twenty-four hours from the commencement of the seizure.

Remarks.—The intensity and rapid progress of the fatal symptoms, the complete absence of reaction during any period of their progress, with the speedy collapse, occasioned some uncertainty, during the early part of the illness, respecting the nature of the lesion of the abdominal viscera. Poison, "spasms" colic, he rlia, or other intestinal obstruction, the passage of gall-stones, succeeded or accompanied with intense abdominal inflammation, successively presented themselves to the mind of the attendants; but a careful study of the previous history of the patient, observation of the progress of the symptoms, the effect of remedies, and finally death within twenty-four hours, led irresistibly to a conclusion, the accuracy of which was demonstrated by post-mortem examination. The patient had apparently always enjoyed excellent health. He had lived well, though not immoderately. Twice during the previous week, on the 19th, when he complained to Mr. New of having eaten a salad late in the evening, and again on the 22d, he had taken aperient medicine, and attended business as usual. On the 23d, he assured his medical friend that he was perfectly well; and on the day of seizure had partaken of his accustomed breakfast of meat, bread, tea and coffee.

He evidently considered himself well, although he admitted to me that lately he had frequently had pain at the epigastrium. He assured us that, after leaving home on that day, (the 24th), he had not partaken either of solid or fluid of any description, excepting the chemist's dose alluded to; and that as well after the doses of aperient medicine on the 19th and 22d, as upon the intermediate and subsequent days, including the day of seizure, his bowels had been properly relieved, as usual. This evidence and the absence of vomiting throughout the case, negatived the supposition of poison or intestinal obstruction.

The inutility of antispasmodic remedies administered at the outset, and the increasing tenderness at the epigastrium, with the alarming constitutional disturbance, prevented the symptoms from being long regarded as dependent upon "spasms of the stomach," colic, or any neuralgic affection. Intense abdominal inflammation was evidently present. To what other possible exciting causes than these enumerated could a seizure so sudden, and prostration so rapid, be attributed? We learned that an elder brother had died of pyloric disease, and we had the information afforded by the patient, that he had gastric pain, and occasional epptic symptoms, to which

he attached no importance. He referred to one especial point, from which his sufferings radiated over the upper part of the abdomen. The burning sensation and aggravation of symptoms experienced upon swallowing, especially stimulating fluids, the absence of vomiting, and the circumstance of his having taken his usual morning meal in a state of apparent health; in fact, all the circumstances reminded us forcibly of cases of perforation of the stomach or intestinal tube, and escape of the contents of the canal into the peritoneal cavity.

Sectio cadaveris, forty hours after death.—Frame athletic; well proportioned, verging upon obesity; abdomen tense; adipose tissue one inch and a half thick beneath the abdominal integuments; copious discharge of flatus on incising peritoneum; no escape of fluid. On reflecting the parietes, intense inflammation immediately revealed itself; the anterior wall of the cavity corresponding with the epigastrium, and adjacent surface of diaphragm were intensely red; ecchymosed in places; slight injection on a few points of the intestines, to the right and left of umbilical region; edge of liver fringed with lymph, and the surface of that organ besmeared with it. On gently raising the larger lobe, bubbles of gas were seen issuing through an aperture near the pylorus, around and beneath which, and in the deeply-seated parts of the abdomen, upwards of a pint of turbid, dark viscid fluid was contained, resembling the mixed matters usually met with in the stomach. The stomach and duodenum were large, flabby, and empty of fluid.

These organs were now carefully removed, with the adjacent structures, for a closer examination of the perforation through which was apparent the matters contained in the peritoneum had escaped. The stomach and duodenum being opened, the perforation was found to be situated immediately below the pylorus, in the upper and anterior wall of the intestine. Towards the abdominal cavity, the aperture was oval, one-third of an inch in its longer diameter. Towards the intestine, the ulceration was triangular in form, with largely elevated and rounded margin. The ulceration, previously to the peritoneal wall giving way, had formed a *cul-de-sac* behind the pylorus, capable of admitting the extremity of a finger. The pylorus was thickened, but preserved its natural firmness. No second ulcer, or other disease of the mucous membrane of the stomach or duodenum, was observed. The liver was perfectly healthy. Permission was obtained to examine the abdomen only.

Modern pathological observation has shown, that ulceration of the stomach proceeding to perforation is more common than the older morbid anatomists believed, although it is sufficiently rare to excite considerable surprise and some consternation, when happening to an individual as publicly known as was the subject of the present case.

From the suddenness and severity of symptoms, in these cases, the suspicion of poisoning immediately presents itself to the mind of the

bystanders, and the rapid dissolution tends to confirm this opinion. Many cases are recorded of death within twenty-four hours from perforation of the stomach, the result of chronic or acute disease of the organ; some within twelve hours of the occurrence of the intense pain which instantly succeeds the escape of alimentary matters into the peritoneal cavity. Cases of this description afford one of the numerous illustrations we witness of the extraordinary extent to which the system sympathises with organic lesions of the abdominal viscera, and the rapidity with which the vital powers sink under such injury. Not less remarkable is the instantaneous and exquisite painfulness of the peritoneum immediately after the escape of the contents of the intestine into this sac, compared with its little sensibility when uninjured. It resembles in this respect the conjunctiva.

"The determination of the probable duration of the pyloric affection, and the peculiar form of disease which terminated in perforation of the intestinal walls, are matters of much interest. We are aware that chronic disease may proceed in other organs to a great extent without necessarily involving the general system, so as to produce proportionate emaciation. We even occasionally observe cancerous affections of the stomach itself proceed to considerable length before the nutrition of the individual is seriously impaired. Perhaps this fact is explicable by supposing that if digestion be incompletely effected in the stomach, the duodenum and upper parts of the remaining small intestine may complete the process. We, nevertheless, cannot avoid associating with disease of the stomach the idea of disturbance of the digestive functions. We expect that at some period of the progress of the disease, sooner or later, the function of nutrition will suffer. It is certain that the patient whose case has occasioned these remarks, did not complain of gastric symptoms until the week before the fatal attack. We are constrained, therefore, to suppose either that the robust temperament of the patient rendered him insusceptible of the ordinary depressing, moral, and other influences, commonly witnessed in stomach affections, or that the principal disease being situated below the pylorus, the ulcer and perforation having occurred in the duodenum, the stomach itself was enabled to continue its functions unimpaired.

"The well-defined character of the ulcer, with attempts at cicatrization, forbid the supposition that the disease had existed one week only. The case must be classed as one of simple chronic ulcer of the duodenum, destroying life by perforation"—*Lancet*.

CASE OF CONTINUED PRIAPISM.

By JOHN W. TRIFE, Esq., Surgeon.

R. W——, aged twenty-six, a stout make and florid complexion, arrived from Calcutta about April, 1844, and had lodged with me since. On Friday night, the 2

mouth, he experienced an unusually fierce desire, with intense erection of the penis, which latter lasted throughout the night, with but little mitigation, being attended with pain of the left side of the organ, near the bulb, and an inclination of it towards the same side. These symptoms continuing, although congress was frequently resorted to, induced him to send for medical aid about two P.M. of the day following, when I found him in the condition above described.

On examination, the corpus spongiosum was found moderately turgid, especially the gland, which was situated near to the anterior superior spinous process of the ilium, and almost touching the abdominal parietes; the corpora cavernosa were fully distended and firm, scarcely yielding to pressure, and without any perceptible difference, either in colour or firmness, at the part from which the inclination towards the left side commenced. When its restoration towards the median line was attempted, the pain was much increased. Beyond these he did not experience any uneasy sensation, nor was his health in any way deranged, the skin being rather moist, the tongue clean and moist, the pulse 75, full and soft, and the bowels open.

Let a cold lotion be applied, and let him take a quarter of a grain of tartar emetic, with one grain of powdered opium, every fourth hour; and three grains of calomel, with six of compound extract of colocynth, immediately.

April 28. — Slightly improved, the pain and inclination towards the left side being lessened, and also the distention of the corpus spongiosum. Repeat the medicines. Nine P.M. — The pain is slightly increased. Let six leeches be applied to the part.

29th. — Decidedly better. The pain is much alleviated, and the corpora cavernosa rather flaccid. The organ has assumed the median line, and forms nearly a right angle with the abdomen. Repeat all the medicines.

30th. — Much worse. The condition of the parts resembles that first described with the exception of the inclination to the left. On close questioning, he acknowledges having had frequent communication since the 26th, and with the usual results, so that I advised his removal to the London Hospital. The report during the time he remained in the hospital was furnished by the senior dresser:—

R. W——, admitted for priapism, under the care of Mr. Luke, on the 30th of April, 1844. The corpora cavernosa are very much distended, but not the corpus spongiosum, or glands; the left crus of the penis is very firm.

Let him be bled to sixteen ounces, and twenty leeches be applied to the perineum. Apply a lotion of spirit in lime water, and give one

grain of calomel and rhubarb.

He was relieved by these means, but the parts were not at all diminished.

About the same.

—some house medicine, and salutarium three times a day.

relieved, the disease being as

Let him have two grains of calomel every third hour.

5th. — The mercury has produced salivation, therefore, it is discontinued; the organ is not so tense; the angle which it forms with the abdomen approaching nearer to a right angle.

10th. — Left the hospital of his own accord; in fact, much against the wishes of Mr. Luke. The penis is more flaccid, and forms a right, instead of an acute angle, with the pubis.

After leaving the hospital, he returned to his former abode, having free intercourse with the same female, until he left England for Sidney. During this time, he had erections, and complete communication; the former, proceeding to the usual extent, and afterwards gradually subsiding to the state in which the organ was previously to the venereal organism.

On leaving England (May 18th), his condition was as follows: Corpus spongiosum flaccid, corpora cavernosa moderately tense, and forming only an angle of about 45° with the pubis.

By letter, dated September, the condition last described remained without alteration for more than three months after he left England, but after that became rapidly palliated, and is now quite removed. On his return home he was perfectly cured, and without any ill results from his accident.

The remarks required by a case of this kind are but few. The lesion appears to have been caused by effusion of blood into the cells of the corpora cavernosa, which remained in a semi-fluid condition. The time (four months) during which it continued is very remarkable, whilst the perfect recovery of the patient eventually, seems to show that any instrumental mode of cure should not be attempted, unless undoubted signs of gangrene appear. In a case treated by Mr. Calloway, and published in the *Medical Repository* for April, 1824, venesection, leeching, the warm bath, tobacco enemata, tartar emetic, and nitre, were exhibited, and camphorated mercurial ointment was rubbed into the part, but without any benefit; wherefore, on the sixteenth day after the erection occurred, the left crus of the penis was punctured with a lancet, and a large quantity of dark grumous blood let out. By pressing the part, both corpora cavernosa were emptied through the aperture, which was followed for a few days by the escape both of pus and blood. The patient recovered, but never gained the power of erection, and therefore remained impotent for the remainder of his life, forming a marked contrast to the success of the foregoing case. In Mr. C.'s case, it occurred during, and was not diminished by repeated connexion.—*Ibid.*

FATAL HEMORRHAGE FROM THE STOMACH AND INTESTINES; PURULENT INFILTRATION OF THE RIGHT LUNG.

by WILLIAM

geon, Upper Berkeley
cal.

ly, a moderately
temperament, a

nursery gardener; is generally much in the open air; not intemperate in his habits. Has an appearance of anxiety strongly marked on the countenance, as if in some degree he suffered from that depression of spirits which accompanies disordered stomach. He had been under my care with suppurating gland in the axilla for about six weeks. After its contents had been evacuated, it left a most troublesome sinus, which, however, was very nearly healed at the expiration of the period above named. From facts which I have learned since his death, he was then guilty of some convivial imprudences, and particularly of drinking some new rum, given him by a relative returned from the West Indies.

On July the 29th he was first taken ill, and on July 30th, I saw him, when his symptoms were as follows:—vomiting, (chiefly of bilious matter), with continual diarrhoea; the evacuations watery, and accompanied with much tenesmus. There was great prostration of strength, shivering, and a rapid pulse (110), bounding under the finger, yet easily compressed; slight soreness about the abdomen; the tongue yellow, and furred in the centre, with red edges and tip. The wound in the axilla not being quite well, I thought from the symptoms, that an attack of erysipelas was impending, especially as he had had one during his illness, after using a stimulating injection to the sinus. Under the influence of calomel and opium (calomel, eight grains; opium two grains; in two doses), followed by effervescing draughts, the vomits and diarrhoea subsided the following day.

31st. — The diarrhoea and vomiting had not returned. He has now a very slight cough; no difficulty in taking a full inspiration; the tongue brown and foul, the pulse rapid, the skin dry and hot. Ordered, to continue the effervescing draughts, and to take the following powders:—Tartarized antimony, one grain; calomel, twenty-four grains; nitrate of potass, two scruples; Dover's powder, 15 grains; for twelve powders, one every third-hour.

August 1st. — I was called to him early in the morning as he was vomiting blood. When I arrived, I found that, in a very short time, he had thrown up nearly three quarts of fluid blood, of a dark colour. The lips were pale and the cheeks sallow, the pulse quick, bounding, and not so much reduced as the great loss of blood and his general appearance would have led me to suppose. As the vomiting of blood still continued, I placed him in the upright position, and took

from five to six ounces of blood from his arm; this produced immediate syncope. I then ordered him the following mixture:—Acetate of lead, twenty grains; Battley's solution of opium, two drachms; distilled vinegar, half an ounce; distilled water, eight ounces; two table-spoonfuls every third hour: the room to be kept cool, and a little cold water to be occasionally given him to drink. Evening:—A little better; the pulse still rapid; has vomited several times since, but the vomited matters contain no recently effused blood; they have much the appearance of coffee-grounds. Has passed several stools containing dark-coloured blood. Complaints of the two-table-spoonfuls of the mixture as being too much for his stomach. Ordered, a mustard-poultice to be applied to the pit of the stomach; a little cold brandy-and-water to be given him during the night, and the following pills to be taken immediately:—Acetate of morphia, one grain: extract of hyoscyamus, six grains; for two pills.

2d.—Had slept a little during the night; towards morning again vomited dark-colored blood; is very faint; pulse 120, and extremely compressible; tongue covered with dark sordes. Ordered, stimulants, arrow-root, with brandy, and beef-tea; a blister to be applied to the pit of the stomach. No evacuation per rectum since yesterday evening. — Evening: no vomiting since the morning; is, however, much weaker, and evidently in a sinking condition: he never rallied, in spite of the use of stimulants, &c.

On the morning of the third of August he passed a stool, consisting nearly entirely of clotted blood, and died almost immediately afterwards.

Post-mortem.—The mucous membrane of the stomach and intestines was of a purplish-red colour, and very easily detached from the neighbouring tissues; they were filled with dark-coloured, semi-coagulated blood. No ulceration, with the exception of a most minute one at the pylorus, could be detected throughout the whole tract. There was some degree of hardness about the muscular fibres of the pylorus, but it could be hardly said to amount to schirrus; the liver was much enlarged and presented an engorged appearance; the right lung was, throughout its whole extent, infiltrated with pus, and so soft that it would easily break down under the finger; in fact, in the stage of pneumonia, which some pathologists have denominated "yellow hepatization."

Remarks.—The interesting points in this case are, 1st, the enormous hemorrhage

from the whole intestinal canal, for the whole tract, from the stomach to the rectum, was found gorged with blood, and presented an uniformly dark congested appearance. Such cases of great congestion, and fearful hemorrhage on it, are, happily, not common in this part of the world. In the tropics they are more frequently met with. The enlarged liver had probably some effect as a predisposing cause. 2d, the purulent infiltration of the lung, which evidently proves, either that pneumonia may progress through all its stages, *part passu*, with enormous depletion; or we must acknowledge that a whole organ may become disorganized, and infiltrated with pus, without antecedent inflammation. How far it might have been a metastatic deposition, in consequence of the healing of the sinus in the axilla, I am unable to say, but must, with many of my professional brethren, long for the knowledge which we do not possess, and exclaim with the Latin poet,—
"Felix, qui potuit rerum cognoscere causas."

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

TUESDAY, JUNE 24, 1845. — DR. CHAMBERS, PRESIDENT.

Account of a Case of External and Internal Cephalhæmatoma complicated with Fracture of the Right Parietal Bone, in a New-born Infant.

By CHARLES WEST, M.D.

The author details in this paper the history of a child, aged sixteen days, on whose right parietal bone there existed a swelling, presenting the ordinary characters of sanguineous tumour of the cranium, or cephalhæmatoma. This tumour had appeared on the third day after birth, and had progressively increased; the child's health, however, continued undisturbed. Slips of plaster were applied so as slightly to compress the tumour, which, under this treatment, ceased to enlarge. The child continued quite well until the eighth day after the treatment had been commenced, no alteration having been made during this time in the plaster originally applied. At the end of this time, without any apparent cause, she was attacked with vomiting, and convulsive twitchings about the muscles of the face. On the ninth day, general convulsions occurred, which returned early on the tenth day, when they proved fatal, the child being twenty-six days old at death.

The tumour, in the exterior of the skull presented the ordinary characters of external cephalhæmatoma. The author, in de-

scribing it, takes occasion to make some remarks on the nature of the hard ring which surrounds these tumours. He mentions the existence of a fissure in the parietal bone, and of a large collection of blood internally, betwixt the dura mater and the skull, in a situation nearly corresponding to that of the external tumour. He gives a minute description of this effusion, and calls especial attention to the reparative process which was going on at the time of the infant's death, consisting partly in the heaping up of bone around the tumour, partly in the deposit of bony matter between the two layers of the dura mater.

The author next assigns reasons for believing the fissure of the parietal bone to have occurred during labour, and not to have been produced by injury after birth. He likewise inclines to the opinion that the internal effusion was not the result of the escape of blood effused originally on the surface of the cranium, through the fissure into its interior, but thinks it most probable that it took place at the same time as the external effusion, and from similar cause.

The variety of recorded cases of internal cephalæmatoma, of which only eight have been described, particularly the fact that no other instance has been related in which the process of cure of internal cephalæmatoma has been observed, are the reasons which have induced the author to present this case.

The paper is concluded by some remarks on affections of this kind, suggested by the peculiar features of the case he has detailed.

Two Cases of Anæsthesia and loss of Motory Function of the Fifth Nerve.

By JAMES DIXON, Assistant-surgeon to the Royal London Ophthalmic Hospital.

This paper contains reports of two cases of anæsthesia and loss of motory function of the fifth cerebral nerve, attended by remarkably different symptoms. In one case the eye on the affected side became inflamed, and vision was destroyed by a deposit of lymph in the pupil, anterior chamber, and substance of the cornea; the same morbid changes taking place in the eye as follow the division of the fifth nerve in Magendie's vivisections.

In the other case, complete anæsthesia had existed for almost a year and a half, and yet there was not the slightest inflammation of the eye, nor any opacity of its humours.

In this latter patient, careful experiments were made, to ascertain what effect had been produced upon the tongue in respect to feeling and taste.

Both were perfect on the right side. On the left, all that part of the tongue which is anterior to the papillæ vallatæ was utterly deprived of taste and feeling, while both these senses were unimpaired in that portion of the organ to which the lingual branch of the glosso-pharyngeal nerve is distributed.

Diseases of the fifth nerve appear to be more frequent on the left side of the body; for out of forty-six cases (recorded by English and foreign pathologists), twenty-nine occurred on the left, and only twelve on the right; while in five patients both nerves were affected at the same time.

Case of Fungus Hamulodes.

By HENRY BLENKINSOPP, of Watwick, Member of the Royal College of Surgeons.

(Communicated by J. G. PERRY, Esq.)

Abel Boisor, aged thirteen, a pauper, fell from a gate, and injured his shoulder, in July, 1843. After some weeks, an enlargement made its appearance in the left arm, near the inner margin of the deltoid, and the boy began to suffer from darting, lancinating pains in the tumour. It rapidly increased, but the patient's state of health prevented any hope from amputation. Near the end of January, an alarming hæmorrhage took place from an ulcerated opening. This was followed by great exhaustion, and the patient died on the 12th of March.

The body was examined on the 14th. On making sections of the tumour, considerable resistance was offered to the scalpel by the walls of numerous cells which formed a great portion of the tumour. These walls were composed of a fibro-cartilaginous substance, and the cells contained encephaloid matter. The disease seemed to have been developed in the periosteum, the cancelli and general texture of the humerus being perfectly healthy. The disease extended to the scapular region, the muscles presenting a liver-like appearance, but the bone was not implicated. The lungs contained tubercles in all three stages. The liver also contained tubercles, and a cyst of hydatids.

The author concludes by briefly alluding to some points in this case worthy of notice; viz., the absence of fungus, the complicated form of the disease, and the healthy condition of the bones.

Case of Excision of the Upper End of the Femur in an Example of Morbus Coxarius.

By WILLIAM FURUSON, Esq.

Professor of Surgery in King's College, London.

John C——, aged fourteen, suffered for fifteen months from hip-disease, and in

February, 1845, was in the last stage of hectic. The head of the femur was displaced on the dorsum ilii, and could be felt by the finger passed into a large sinus connected with the disease. The limb on the affected side was between four and five inches shorter than the other, and much distorted by flexion at the knee and hip. There was no indication of disease of the bones of the pelvis, and the head of the femur seemed the principal cause of suffering.

On the 1st of March, 1845, the author made a longitudinal incision on the hip over the head and neck of the bone, and those parts, with a portion of the shaft, including the trochanters, were removed, the bone being cut across with a common saw. The patient bore the operation well; the previous bad symptoms soon disappeared, and in two months he was able to move about the wards of the hospital on crutches; the wound being nearly closed.

The paper concludes with a short historical sketch of the operation, whereby it is shown that this is the second instance in which it has been successfully performed in this country, having been first proposed by Mr. Charles White, of Manchester, in 1770, and first performed by Mr. Anthony White of the Westminster Hospital, in 1818.

Additional observations on the treatment of the Pulmonary phthisis.

By James Clark, Esq.

This paper is intended as an appendix to that on the same subject, communicated by the author last year, and published in the last volume of the *Transactions* of the Society.

A man, fifty-five years old, was under treatment for stricture of the urethra. His general health was considered pretty good, and he made no complaint, no attendant of any thoracic disease, but one afternoon, while, to all appearance, in his usual health, he fell on his face from his bed-side, and died in less than two minutes.

On a careful examination, nothing was found that could have caused death except the obstruction of nearly all the larger branches of the pulmonary arteries, by old and variously discoloured and altered clots of blood. In other parts, the blood was fluid, or soft, and recently coagulated. The kidneys were slightly granular, but no other organ was importantly diseased.

The author discusses the cause of death, and of the coagulation of the blood in this and similar cases. He maintains, that in the

cases which are not complicated with structural disease of the lungs, death is produced, not by asphyxia, but by gradual retardation, and, at last, cessation of the movement of the blood through the substance of the heart and brain, the systemic circulation becoming gradually slower as more and more of the pulmonary arteries are obliterated, and less blood is transmitted through the lungs. Hence it is, he thinks, that, in the majority of the recorded cases, though the disease was long in progress, yet the signs of danger and death were sudden.

The author alludes to several circumstances which he believes may cause an arrest of the blood in the pulmonary vessels, and its consequent coagulation; but he suggests that the chief one is some morbid state affecting its constitution so as to increase that adhesion of it to the walls of the vessels, which constitutes, even in the healthy state, the greatest resistance, which the heart's power has to overcome. Such a diseased state, he believes, is produced by the existence of urea in the blood; and in confirmation of this opinion he remarks, that in at least three of the five cases in which no other cause could be assigned for the coagulation of the blood in the pulmonary arteries, the kidneys were granulated.

Case of Strangulated Hernia reduced en masse, with observations.

By ROBERT WOOD, Esq.,
Senior Surgeon to the Westminster General Dispensary.

The patient, a man in his seventy-fifth year, who had been afflicted with inguinal hernia on both sides for nearly thirty years, was seized with the usual symptoms of strangulation. On examination, no appearance of hernia could be detected. Purgatives and enemata failed in procuring evacuations. The circumstance of a slight darting pain having been experienced by the patient in the right inguinal region, on getting out of bed on the day that he was taken ill, and that on coughing the hernia descended on the left side, but could not be made to protrude on the right, led to the conclusion that the right hernia, with its investing sac, had been reduced en masse by the patient, and that the obstruction existed in the neck of the sac on that side. The author accordingly operated on the right side, in the evening of the second day. The inguinal canal having been freely laid open by a division of the tendon of the external oblique muscle, the sac, which was much thickened, and closely embraced the intestine, was opened. It contained a small knuckle of congested intestine. A mem-

branous band, distant as far as the finger could reach, was divided, and the strangulated intestine was then reduced. The patient afterwards recovered.

The author concludes the paper with a brief notice of twenty similar cases, recorded by British and foreign surgeons, and remarks, that a consideration of these cases cannot fail to suggest the necessity of the most careful examination being made in every instance, where symptoms of internal strangulation are present.

Account of two cases of Aneurism in which there was neither Pulsation nor Abnormal Sound.

By T. A. BARKER, M.D.,
Physician to St. Thomas's Hospital.

In the first of these cases there was a large aneurism of the aorta, commencing about two inches above the heart, and extending a little above the origin of the left subclavian; through the whole of which space the artery was at least three times its natural diameter.

In the second case there was an aneurism of the right renal artery, of the size and shape of a heart of ordinary bulk.

In the first case the aneurism was not detected during life; and, in the second, it was discovered only the day before death; although a post-mortem examination did not reveal any cause of the absence of the ordinary symptoms.

The cases are considered remarkable, not because large aneurisms existed without being detected, but because neither pulsation could be felt, nor abnormal sound heard, although certain symptoms had led to the strong belief that aneurisms existed in the arteries where they were afterwards found; and repeated and careful examinations were made with the expectation that unequivocal symptoms of aneurism would be detected.

Observations on Fissure of the Palate.

By ALEXANDER NASMYTH.

The interesting paper lately laid before the Society by Mr. Fergusson, "on the Anatomy, Physiology, and Surgical Treatment of Fissure of the Palate," has induced the author to submit his views on the mechanical assistance which may be offered in cases where such surgical treatment may be undesirable or not submitted to.

The author corroborates from his experience the accuracy of Mr. Fergusson's statement, that of late years English surgeons generally have abandoned cases of fissure of the palate, and left their patients

to apply for mechanical adaptations. After applauding the superiority of a formation or restoration of the parts to a natural state over every other kind of assistance from art, and admiring the important step towards the improvement of the purely surgical operation made by Mr. Fergusson, the author takes a review of the mechanical contrivances which have been had recourse to both in this country and abroad, distinguishing between those for congenital fissure, and those for fissure arising from disease. He shows wherein those contrivances have been found to fail—states the inconveniences inseparable from mechanical adaptations, also those consequent on the surgical treatment—describes the nature of the cases which indicates the propriety of mechanical interference, and those which forbid such interference—simplicity and durability being the great desiderata sought to be obtained in these adaptations. He also describes the contrivances by which he has attempted to arrive at those ends, explaining what may be reasonably expected from following out his views; and he shows that in cases of fissure arising from disease, perfect deglutition and articulation may be confidently promised; that in congenital cases, deglutition may be perfectly established, and very great aid afforded to articulation; and that articulation, in congenital cases particularly, requires time and perseverance on the part of the patient, great care and exactitude on that of the practitioner, but that, those requisites secured, great benefit may always be promised, if not distinct and perfect articulation anticipated.

Statistics of Bethlem Hospital, with remarks on Insanity.—Part II.

By JOHN WEBSTER, M.D., F.R.S., &c.

After referring to his previous paper, published in the 26th vol. of the Society's *Transactions*, the author makes some remarks respecting the period of the year when mental diseases were most prevalent, when the greatest number of patients were cured, and when the largest proportion of deaths occurred at Bethlem Hospital. These points he illustrates by a table compiled from the official registers (which shows that most lunatics were admitted into the institution during the second and third quarters of the last twenty—most were cured during the third quarters, whilst the largest deaths were met with in the last quarter of the year). The author next

occupation of insane patients, and states that sixty-six per cent. of the inmates of Bethlem Hospital are now employed. This employment of the insane is found to have a very beneficial influence in their treatment, and tends materially to diminish the necessity of using personal coercion in the management of lunatics; in proof of which, the author states that five years ago the weekly average of persons under restraint was thirteen, whereas at present, when the system of employing the insane patients is more developed than formerly, during some weeks only 1, and occasionally, not even one individual is in restraint. The author subsequently gives a synopsis of twenty-eight autopsies recently performed at Bethlem Hospital by Mr. Lawrence, thus making one hundred post-mortem examinations of lunatics, if the seventy-two dissections previously reported are taken into the account. The diseased alterations of structure are succinctly described in the twenty-eight cases now brought before the Society, of which the following may be given as a summary:—In twenty-five, there was infiltration of the pia mater; in twenty-four, turgidity of the blood-vessels; in nineteen, effusion into the ventricles; in twelve, fluid was found at the base of the brain; besides other varieties of morbid appearances. In twenty-two cases, the organs of the chest were diseased; and in thirteen, the abdominal viscera were more or less affected. In conclusion, the author makes some general observations on the facts contained in his paper.—*Ibid.*

PROFESSOR CAMPBELL'S STATISTICS OF MIDWIFERY.

"These statistics are founded on 5,754 deliveries which have occurred for some years in the author's private practice, and such as have been under the management of his pupils; as also those for which he has been consulted by professional friends.

"The oldest parent among the males was 77 years of age, and his wife produced thirteen sons and three daughters—two of the latter being by a former husband: when her sixteenth child was born, she was in her forty-first year. In 5,754 deliveries, there were but 5 male parents below the age of 20; 4 at 18, and 1 at 19. Among the female parents, 2 only were delivered at the age of 50; 3 at 47; 9 at 46; 15 at 45; 20 at 44; 21 at 43; 37 at 42; 28 at 41; 124 at 40; 153 at 39; 87 at 38; 35 at 37; 7 at 36; and 2 at 35. Of the whole number of female parents referred to, each of 31

mothers produced 12 children; 14—13; 5—14; 1—15; and 3—16 children.

"In 5,754 deliveries there were 2,901 male, and 2,219 female children; the sex of the remainder had not been recorded.

"There were, in 400 first deliveries, 244 males and 160 females, including three twin births, of which one was a female and five were male infants.

"In 116 illegitimate births, there were 65 male 52 female infants, including one twin delivery, in which there was one of each sex.

"By 153 males and females of equal ages, 318 males and 245 females were procreated, including three twin births, of which two were male and four female infants.

"By 340 fathers, from 3 to 6 years older than their wives, 795 males and 351 females were produced, including five twin cases, in which there were three males and seven females.

"By 143 fathers, who were from 7 to 10 years older than their wives, 366 males and 289 females were produced, including one twin birth, of which both were male infants.

"To 112 fathers, who were from 11 to 36 years older than their wives, 267 males and 194 female children were born, including one twin birth, in which there was one infant of each sex.

"To 117 husbands, who were from 3 to 17 years younger than their wives, 285 males and 214 females were born.

"In 1,310 deliveries, extending over a period of four and a half years, the head presented in 1,244 births, with the face towards the right ilium, in 977 instances, and in the reverse position in 263 cases; in the remainder, some other part of the fœtus presented, or the delivery had been effected without assistance, and the presentation not ascertained."

Rupture of the Uterus.

"Eight cases of rupture of the uterus occurred, in which the writer had some responsibility. All proved fatal except one, in which the laceration happened in the lower and back part of the cervix of the organ, and in the upper part of the vagina. Only one of the fatal cases was examined with accuracy, and in this instance a rent so extensive was discovered in the anterior wall of the body of the organ, as to permit nearly the whole of the body of a large fœtus to protrude among the intestines.

"One-hundred and seventy-two forceps cases. In sixteen of these, the fœtus was still-born, and four of the parents died from puerperal inflammation. Of the fœtuses

still-born, there was satisfactory evidence that all except six had been dead before forceps had been used. Contrary to what has been stated by Professor Burns, who may be considered among the highest authorities in midwifery, I am quite confirmed in an opinion which I have long since advanced—viz., that cases may occur in which both blades of the instrument cannot be applied. In a great majority of the foregoing cases, the infant was of the male sex. This amount of instrumental practice extended over a period of twenty-six years, and consisted for the most part of labours in which the narrator had been consulted. — *Idem*.

Vaginitis Uterius.

"When this occurred there was no medical attendant present; but the cries of the child were so distinctly heard by a female acting in the capacity of nurse, that she thought it was actually born, and upon this supposition she went off for the gentleman who was to have attended the patient. The crying was heard when the membranes were ruptured, but the fœtus was not expelled for three hours afterwards. The fœtus was a male, and the face descended towards the right sacro-iliac symphysis. — *Idem*.

The Sex of the Child.

"It may be noticed, that although, as a general rule, matrons suffer more while in labour with their male than with their female children, as was pointed out many years ago by some of our brethren in charge of lying-in establishments, yet that exceptions are occasionally met with. The writer was concerned in two cases in which this was strikingly exemplified. In one of these, the individual produced four daughters and three sons; and while her labours with the latter were comparatively easy, she suffered severely with the former. The second was the mother of three female and two male children; the latter were born alive, but all the former were still-born; and the birth of the third, from the protracted detention of its head in the pelvis, was followed by a vesico-vaginal fistula, though forceps had not, nor could have been used, for want of space. The cranium of the female fœtus, though generally somewhat smaller than that of the male, nevertheless bulges so much more at the parietal protuberances than the male head, that if the sacro-pubic diameter at the brim were but in a trivial degree less than the standard size, or the head somewhat larger than usual, this would render parturition more painful

and protracted with a female than with a male-child. In the great majority of head-presentations, the sex of the fœtus may be predicted by an experienced practitioner before its expulsion, owing to the conformation of the cranium, and its degree of mobility in traversing the pelvic brim. Among the causes for retarding delivery the writer has been consulted in several instances, where ankylosis and consequent incurvation of the coccyx were concerned: one case required the perforator, two the use of forceps, and in a fourth the fœtus was still-born, being the second dead child produced by this woman, owing to the condition of the sacro-coccygeal joint, as was confirmed by the examination of the pelvis, after the expulsion of the last fœtus." — *Northern Jour. of Med.*

CASE OF RACEMIFEROUS HYDATIDS OF THE UTERUS.

By J. K. MITCHELL, M.D.

On the 10th. of July I was called to the case of Mrs. T——, who had returned a few days before from a visit to "the South." She complained of nausea, such as usually affects females during utero-gestation, but of greater intensity and prolongation. There was also an unusual degree of tenderness to the touch in the hypogastric region, extending to the right iliac fossa. A careful examination of the part by palpation, presented no unusual conformation, induration, or tumefaction. The history of the case led to the supposition of the existence of a pregnancy of about a month's duration, as previously to that period her catamenial regularity and perfect health left no doubt of an unimpregnated condition.

Apéritient medicines, to regulate a costive state of the bowels, and antacids, for an acid condition of the stomach, with sinapisms as revellents, relieved the more pressing symptoms. On the 18th of July my attention was called to a small tumour on the right side, about half way from the symphysis pubis to the anterior superior spinous process of the os ilii, in right line. It was then about the size of a turkey's egg. The part was painful to the touch, ached when at rest, and suffered from attempts to alter the position in bed. There was a remarkable frequency (120) of the pulse, some heat of surface, and an anxious expression of countenance. The tongue was dry, but clean, the thirst moderate, the nausea irrepressible; and slight mental incoherency, with restless movements of the head and

hands, indicated much disturbance of the innervation.

The application of leeches and a poultice relieved, in some measure, the local suffering, and an antispasmodic prescription abated the restlessness.

No examination exteriorly over the *symphysis pubis*, by palpation or percussion, could detect any uterine enlargements; so that I was led to suppose that there was an acute affection of the right ovary, complicated with peritonitis, and therefore placed the patient entirely at rest, and used such antiphlogistic measures as her feebleness would permit.

On the 22d of July the uterus was perceptibly enlarged, occupying a position entirely to the right of the medium line, and extending from the place of the tumour first discovered to the *symphysis pubis*.

On the 26th, an examination *per vaginam* was permitted, and resulted in the certainty that the uterus was enlarged, and connected with the tumour, as the movement of the one altered, in a corresponding manner, the position of the other.

On the 28th, it was found that the rapid increase in the size of the uterus had obliterated the exterior vestiges of the lesser tumour, and that the former occupied the whole of the right hypogastric region, and, rising above the umbilicus, extended a little way to the left of the *linea alba*.

Irritation, and probably pressure suddenly produced, interfered with the power of micturition, and a catheter was used to withdraw the urine, of which the quantity was scanty, and the quality offensive.

As the case had by that time assumed a difficult and threatening shape, I asked for the assistance of my friend, Dr. R. M. Huston; and accordingly, on the 30th of July, a consultation was held, and another very careful examination made, exteriorly, and *per vaginam*.

The uterus had by this time acquired such a size as to fill nearly the whole abdominal cavity on the right side, while it extended about two inches to the left of the *linea alba*, without any obliquity in the position of the *os tinctæ*, to explain the presence of the body of the uterus on the right side above.

The history of the case, the short period of time since the cessation of the menses, the singular tumour on the right side, and the preternatural rapidity of the development of the uterus, rendered the diagnosis obscure; but on the whole, we were disposed to believe that a dropsy of the right ovary had extended to the uterus, or that there was a rapid production of a mole *in utero*. The absence of any fremitus on percussion, and the escape of a little unmixed blood, mixed as to hydatids; and the rapidity of development, and failure to excite motion, left no doubt as to the absence of a fetus.

. On the 7th of August contractions of the uterus, with the usual pains, announced expulsive efforts, and in the course of the night an immense body of hydatids were expelled. There were many thousands of these vesicles attached to each other, or to a common membrane, so as to appear like bunches of grapes. They varied in size from almost imperceptible globules to the dimensions of large grapes. A few had acquired the volume of a pigeon's egg, while one or two were as large as a hen's egg. They were transparent, uniform, and without nucleoli or apparent organs, and might be properly termed racemose acrophalocysts.

Hemorrhagy and after pains, as in ordinary cases of labour, followed the expulsion of the hydatids, without causing any abatement of the abdominal tenderness or frequency of pulse.

On the following day signs of puerperal peritonitis became obvious; an addition was therefore made to the consultation by calling in Dr. Joseph Hartshorne, and such measures taken as were possible in the exhausted condition of the patient.

On the 9th the case ended in death, and in thirty-two hours thereafter an autopsy took place, for the following minute of which I am indebted to Dr. Charles Huston, who conducted the dissection.

On opening the cavity of the peritoneum it was found to contain about ten ounces of turbid serum, mixed with pus, of which latter a less dilated portion was found in the pelvic cavity. The right ovary was completely disorganized, nothing having been left of it but the exterior membrane, which was found ruptured, and appeared to have been filled with pus, of which a part still remained. The left ovary was enlarged and softened. It presented, when cut into, a very beautiful, perfectly developed corpus luteum.

The uterus was about the size of that organ, as it is usually found a day or two after delivery. The interior presented a rough surface at the fundus, as if there had been an attachment of the membrane or of some of the hydatids to it, and that part was partially covered with coagulated blood. The cervix was of an unusually dark hue, but not softer than usual.

This case is interesting for several reasons:—

1st. Because, it gave no signification of its character by the discharge, from time to time, of single vesicles, or by intermittent gushes of water, produced by their accidental rupture, an event not unusual in such cases.

2d. Because it was obviously a consequence of impregnation; a blighted ovum having given origin to the disease, as evinced by the presence of the membranes, to which the vesicles were attached, and by the perfect development of a corpus luteum.

3d. Because of the very rapid development, first of an ovary, then of the uterus.

4th. Because of the severe constitutional disturbance, which, as proved by the history of other cases, marks the presence of hydatids *in utero*, and is not commonly found either in uterine dropsy or pregnancy.

5th. Because there remained 'no traces of a foetus, and no vestiges of an ovum, except the transparent membrane to which the vesicles were attached; the most careful examination of which could not *per se*, have given evidence of an ovarian origin. — *Med. Exam.*

ON THE EFFECTS OF TOBACCO.

By R. H. ALLNATT, M.D., A.M., F.S.A.

In the British and Foreign Review there are some observations by Dr. Chapman, an American physician, on the deleterious influence of the excessive use of tobacco. Nobody, perhaps, can speak on such a subject with an air of greater authority than one of our transatlantic brethren. The story of the dull and leaden tobacco-chewing senator, on board an American steamboat, is a picture of life and reality. The consumption of tobacco by Dr. Chapman's Member of Congress was "almost incredible by chewing, snuffing and smoking."

When Raleigh introduced tobacco into England (for he still maintains the credit, notwithstanding the counter-assertions of Humboldt), the practice of smoking spread so rapidly, that, at the end of the sixteenth century, bitter complaints were made in England of this imitation of the manners of a savage people. It appears from Camden, that the fumes were emitted by the nostrils — "e naribus efflant." Raleigh gained little credit from high quarters for the service he had rendered the community, as appears from the celebrated "Counterblast" of James I. "And now, good countrymen," says the regal anti-tobaccoist, "I pray you consider what honour or policy can move us to imitate the barbarous and beastly manners of the wild, slavish, and godless Indians, especially in so vile and stinking a custome." Sir Edward Coke, on the trial of the unfortunate Raleigh, thus apostrophised him from the bench: "Oh, damnable Atheist!" exclaimed the learned commentator upon Littleton, "I will prove you the notorious traitor that ever came to a bar. Thou art a monster! Thou hast an English face but a Spanish heart. There never lived a viler viper on the face of the earth than thou! Go to, I will lay thee on thy back for the confidentest traitor that ever came to a bar. See the most horrible practices that ever came out of the bottomless pit of the lowest hell!"

"In 1634, smoking was denounced in Russia under the penalty of cutting off the nose — a penalty, by the way, rather more appropriate to the practice of snuffing than that of smoking. The Turkish Sultan, Amurath the Fourth, rendered smoking punishable by death, under the supposition that it produced sterility. Urban

VIII. amathematized the use of tobacco in churches. In the laws of Berne, the prohibition of smoking followed immediately after the crime of adultery.

"The specific appellation, according to Humboldt, is derived from *tabac*, the name of an instrument used by the natives of America in smoking the herb.

"The essential oil of tobacco is formed by destructive distillation; hence it is produced in the ordinary practice of smoking. A curious instance of the deadly power of this substance is given in Barrow's *Travels in Africa*: — 'As I was endeavouring,' he writes, 'to set a snake at liberty, which was about two feet in length, one of the Hottentots took out, with the point of a stick, from the short stem of his wooden tobacco-pipe, a small quantity of thick black matter, which he called tobacco-oil. This he applied to the mouth of the snake while darting out its tongue, as those creatures usually do when enraged. The effect of the application was instantaneous, almost as that of an electric shock. With a convulsed motion, that was momentary, the snake half untwisted itself, and never stirred more; and the muscles were so contracted, that the whole animal felt hard and rigid, as though dried in the sun.'

"According to Orfila, the celebrated Santeuil experienced vomiting and horrible pains, amidst which he expired, in consequence of having drunk a glass of wine in which some Spanish snuff had been infused; and from experiments instituted by the same toxicologist, it was found that five drachms and a half of common rappee, introduced into the stomach of a dog, caused nausea, giddiness, stupor, twitching of the muscles of the neck, and death in nine hours; and that two drachms and a quarter, applied to a wound, proved fatal in an hour.

"Malin has recorded two cases of death from excessive smoking; in one case seventeen, and in the other eighteen, pipes having been taken at a sitting. Fatal instances have also been given by Sir Astley Cooper and Sir Charles Bell, of the administration of the infusion of tobacco in hernia. The smoke by inflation of the intestines, produced death in a case witnessed by Dessault. The application of tobacco poultices to the abraded skin in some instances has produced serious results. In the *Ephemerides*, an account is given of three children, who were seized with giddiness, vomiting, and fainting, from the application of tobacco leaves to the head, for the cure of ringworm.

"Brodie's experiments prove that the action of the infusion of tobacco, when injected into the intestines, is to destroy the action of the heart, stop the circulation, and thus produce syncope and death. The empyreumatic oil, on the contrary whether applied to the tongue or injected into the intestines, does not stop the action of the heart, but occasions death by destroying the functions of the brain, without directly influencing the circulation; this diversity of action may probably be referred to the presence of *nicotin* in the infusion, which is not contained

in the essential oil. The extract, prepared by a gentle heat, is not divested of nicotin, and therefore acts in the same manner as the effusion. It has recently been recommended by Mr. Chip-pendale, as a local application, in the treatment of the *douloureux*.

"Tobacco smoking, a few years ago, was carried in this country to a great excess: and now, according to the statistical returns, the annual consumption of tobacco is very large. It is, however, no longer a fashionable habit in our streets; and the prohibitions which exist against its use in various places of public resort, may eventually have the effect of still further diminishing the pernicious custom.

"Chewing tobacco, in England, is happily confined almost entirely to the humbler classes. In this process all the soluble parts of the plant are taken up by the saliva, and a great portion swallowed. I witnessed an instance of the deleterious effect of this habit in the early part of last summer. On a fine cool day, whilst walking the fields, I was struck by the appearance of a young man, engaged in the pursuits of husbandry; his occupation was not an arduous one, but streams of perspiration ran down his face, his knees tottered, and he appeared scarcely able to sustain his emaciated body over the fallow ground. His cheek was sallow and sunken; his eye listless and heavy; and altogether he presented the appearance of a man inordinately given to opium-eating. Supposing he was ill, I questioned him, and he told me he had lately taken to chewing tobacco. The emetic effects produced at first had subsided, but his appetite was almost destroyed, and he was evidently gradually wasting under the noxious influence of the narcotic poison. I recommended, of course, a discontinuance of the abominable habit, and he took my advice. From that moment he began to recover his physical powers.

"Such are some, and some only, of the effects of tobacco upon the system. In moderate doses it acts as a narcotic, sedative, emetic, diuretic and cathartic; but its habitual employment will produce a tolerance of its effects, so that in progress of time the constitution becomes to a certain degree inured to, and capable of withstanding its powers. But this resistance is gained at the expense of the vital energies. The nervous system becomes universally depressed, and hypochondriasis and dyspepsia, with their train of evils, follow. In the present luxurious and artificial state of society, more especially in large towns, medical men are frequently at a loss to ascribe the maladies they are called upon to treat to a specific origin; but I firmly believe the habit of smoking has engendered, in this generation, many evils which have been imputed to other sources. I have known frequent instances of men, in the vigour of life, whose habits were temperate and active, but who, nevertheless, were harassed by a hypochondriacal melancholy, which rendered life almost a burthen. In these cases I have found that they were habitual smokers, and, moreover, that they smoked fasting; and consequently the saliva,

necessary for the first process of digestion, was secreted in undue quantity, and wasted. The Turkish Sultan who prescribed the bow-string for offenders, grounded his imperious edict on the supposition that tobacco produced sterility. That it does exercise great sedative power over the generative function there is no question, from the concurrent testimony of all great smokers; this, however, may probably arise more from its general debilitating effect, than from any specific power it may exercise over that peculiar system.

"In all cases of indigestion and depression of the nervous energy, smoking should be strictly prohibited. I have known even a single pinch of snuff produce, in a person unaccustomed to its use, an instantaneous secretion of acid in the stomach, giving rise to intense gastrodynia. It has been frequently recommended in pyrosis, on the supposition that its sedative effects would arrest the effusion of fluid; but the grounds are erroneous; we can never isolate such effects; and if we could, the remedy indicated is not a sedative.

"In conclusion, this paper has no other object than that of calling the attention of medical men to a subject which, I think, has been too much neglected."—*Med. Gaz.*

ON THE CRIMINAL RESPONSIBILITY OF THE INSANE.

By THOMAS MAYO, M.D., F.R.S.,

Physician to the Infirmary of St. Marylebone.

The extent to which the understanding of persons partially insane may be made instrumental to their self-management, by supplying motives and fears, is not at present appreciated. The following brief outline of a case which came within my cognizance two years ago illustrates this subject:—

"A gentleman of fortune was admitted two years ago into the establishment of an eminent physician, under good certificates. After a short stay, he somewhat rapidly obtained a considerable increase of rationality and self-control; and then urgently demanded his liberation. In the course of a searching inquiry into the grounds on which his enlargement or further detention might be justified, it became very obvious both to the proprietor of the establishment and to myself, whose opinion was demanded on the subject, that both on this occasion, and probably on a former one, this gentleman had heightened and given prominence to certain eccentricities of a morbid kind, which he knew would afford a colourable ground for this kind of confinement. His object had in both instances been to escape the punishment of certain misdemeanors, of

which he had been guilty, by a temporary sojourn at a lunatic asylum, in a character to which he certainly had claims. These misdemeanours had been of a gross kind. In the former instance he appeared to have set his own house on fire, with a view to obtain from an insurance office the sum insured. In the other case he had made himself obnoxious to the police authorities of St. Omer, by indecently exposing his person. In both instances, I have observed that he had well-marked claims to being considered monomaniacal; in the latter he was seen by Dr. Monro, who agreed with us in that opinion. His resumption, however, of self-control and coherency was so complete, that it soon became unfit to restrain him in the asylum. He was set at liberty. He ought in truth to have been transferred to a prison. I regret that the claims of medical confidence, and my unwillingness to afford a clue to the discovery of this case, prevent my mentioning the name of the establishment and of its excellent proprietor.

"Macnaughten, the murderer of Mr. Drummond, expressed in conversation between him and the visitors sent to report upon his case, which one of them, Mr. Maclure, reported afterwards at the Harveian Society, — that he should not have liked to have been hanged for his attempt on Drummond's life, but that he felt sure the *Duke of Wellington* would not hang him. His prospects of eventual impunity would have been considerably brightened, had he foreknown that Chief Justice Tindal would not even allow his trial to proceed to a conclusion.

"While courts of judicature are showing a very laudable anxiety to protect the persons of the partially insane from unreasonable coercion, it is equally incumbent on these courts to protect the public from the consequences of that liberty of action which it thus secured to the partially insane. Their liabilities ought to be commensurate with their privileges.

"In the recent trial of Martha Brixey, for the murder of an infant, at Greenwich, in which a verdict of homicidal mania was very properly returned, Mr. Clarkson contended, notwithstanding the general solution given by the judges to the questions propounded to them by the House of Peers on the subject of mania, that "no general rule could be applied to cases of this sort; that each case must be dependent on the peculiar facts which surround it." I believe that Mr. Clarkson is quite right: — but if so, how can a common jury, thus left at sea, be

competent to try, with safety to the public or the prisoner, these important cases? An adversaria of their conflicting verdicts would in truth be a valuable compilation. The homicidal mania of Nicholson, the murderer of the Bonars, and of Bellingham, the murderer of Mr. Percival, were both fully as capable of proof as that of * Miss Broadrick, the murderess of Mr. Errington, and of Macnaughten, the murderer of Mr. Drummond. The first pair were hanged; the latter pair received into a lunatic asylum!" — *Lond. Med. Gaz.*

BULLETIN.

Philadelphia, September, 1845.

In a preceding page will be found a notice of a paper on *Cyanosis*, read before the French Academy of Medicine by our esteemed *confrère*, Dr. Charles D. Meigs, during his short sojourn in Paris. The composition and reading of a communication in French before this learned body, was less of a task and a venture for Dr. Meigs than for most American or English savans, owing to his familiar acquaintance with the language in its idiomatic form of expression.

Hardly was time allowed us to transmit to our printers the account of the sitting of the Academy at which Dr. Meigs was present, when we had the pleasure of shaking hands with our friend, on his return among us; he having, in the meantime, visited Belgium, Germany, and Switzerland, prior to his again visiting England on his way homeward.

Dr. Meigs speaks in the warmest terms of the manifestations of comity and kindness displayed to him by the professional gentlemen, both in England and on the Continent. How far these were given as a tribute to his personal and professional worth and position, and to his being, for the nonce, a representative of American physicians abroad, we leave to our readers to judge; not wishing, on our part, to incur the accu-

* See Annual Register of 1795. See also Remarks, by T. Mayo, M.D.; *Med. Gaz.*, vol. xxiii., p. 333.

sation of flattery by giving utterance to our own convictions and feelings.

MEDICAL COLLEGES.—We observe, in the "Catalogue of Students attending Medical Lectures in Boston," in Harvard University, that the number, for the last season, was 157. The Circular, of which this catalogue is a part, gives the names of the able Faculty of the Massachusetts Medical College, "the Medical Department of the University" and sets forth the mode of teaching and the appliances for successful instruction in the various models, preparations and specimens exhibited by the professors of the several branches.

"Taking into view the amount of instruction given in this school, the splendid and extensive apparatus with which it is furnished, its connection with the numerous cases and operations with one of the best conducted hospitals in the United States, together with the general thorough acquisitions and high respectability of its graduates, it may be doubted whether any seminary in the country offers the means of a more complete professional education, than may be obtained in the Medical School of Boston."

In the "Annual Circular and Catalogue of the Officers and Students of the Laporte University, Session of 1844-5," we read the names of forty-five students who were on attendance in the Medical Department, and of six who were graduated at the termination of the Lectures. The faculty consists of seven professors, each of whom teaches a separate branch.

PAUPER LUNATICS IN ENGLAND AND WALES.—Lord Ashley, M.P., has obtained a return of the number of pauper lunatics and idiots chargeable to each union in England and Wales. Taking the population of the counties in England alone, as estimated by the census of 1841, at 13,026,664, it appears that there were chargeable to the parishes comprised in all the unions of England, in the month of August last, 7,271 lunatic paupers, of whom 3,181 were males, and 4,090 females; and 6,882 idiots, of whom 3,271 were males, and 3,611 were females. Thus, the grand total of lunatics and pauper idiots amounted to 14,153. Of these, 3,574 (1,720 males and 1,854 females) were maintained in county lunatic

asylums, 2,559 (1,156 males and 1,403 females) in licensed houses, 4,080 (1,819 males and 2,261 females) in union workhouses, and 3,940 (1,748 males and 2,192 females) with their friends or elsewhere. Of these unfortunate creatures, 6 were under 5 years of age, 10 under 40, 818 under 20, 2,828 under 30, 3,117 under 40, 3,046 under 50, 2,272 under 60, 1,430 under 70, and 596 upwards of 70 years of age, 3,544 were dangerous to themselves and to others, and 2,390 were of nasty or filthy habits. The average cost of their maintenance was—in county asylums, 7s 3½d. a head per week; in licensed houses, 8s 8½d. per week; and elsewhere, 2s 7d. per week. In Wales, out of a population of 884,173, there are 379 lunatics, and 820 idiots—making a total of 1,199, of whom 37 are maintained in lunatic asylums, 55 in licensed houses, 91 in union workhouses, and 1,016 by their friends, &c. The average cost of their maintenance and clothing per week is—in county lunatic asylums, 7s 9½d.; in licensed houses, 8s 4½d.; and elsewhere, 2s 3½d. The grand total of 589 unions in England and Wales gives—7,650 lunatics and 7,702 idiots, making a total of 15,352, of whom 3,611 are maintained in county lunatic asylums, 2,614 in licensed houses, 4,171 in union workhouses, and 4,956 with their friends, &c.; 3,638 are dangerous to themselves or to others, and 2,590 are of foul or dirty habits. The average weekly cost of their maintenance and clothing is—in county asylums, 7s 3½d.; in licensed houses, 8s 8½d.; and elsewhere 2s 6½d. Under local acts there is a population of about 1,574,371 (in the counties of Chester, Devon, Gloucester, Kent, Middlesex, Norfolk, Oxford, Salop, Southampton, Surrey, Sussex, Warwick, Wilts, Yorkshire, and Montgomeryshire). The number of lunatics amounts to 1,086, and the number of idiots to 458—making a grand total of 1,544. Of these, 613 are immured in county lunatic asylums, 334 in licensed houses, 209 in union workhouses, and 88 are under the care of friends or relatives; 393 are dangerous to themselves or to others, and 229 of filthy habits. The average weekly cost of their maintenance and clothing per head is—in county asylums, 7s 1½d.; in licensed houses, 9s 10½d.; and elsewhere, 3s 6½d.; 91 are under 20 years of age, 273 under 30, 355 under 40, 353 under 50, 246 under 60, 141 under 70, and 74 upwards of 70. Such is the nucleus of the return issued.—*London Exam.*

DOCTORS AND TUTORS IN TIMES GONE BY.—“As for tutors, and doctors, and such

people, if, now-a-days, my lords and my ladies walk arm-in-arm with them, they did not do so in my time. I recollect an old dowager, to whom I used sometimes to be taken to spend the morning. She was left with a large jointure and a fine house for the time being, and used to invite the boys and girls of my age, I mean the age I was then, with their tutors and governesses, to come and see her. 'How do you do, Dr. Mackenzie? Lord John, I see, is all the better for his medicine. The duchess is happy in having found a man of such excellent talents, which are almost too great to be confined to the sphere of one family.' 'Such is the nature of our compact, my lady, nor could I on any account violate the regulations which so good a family has imposed upon me.'—It's very cold, Dr. Mackenzie: I think I increased my rheumatic pains at the Opera on Saturday night.' 'Did you ever try Dover's Powders, my lady?' He does not, you see, tell her to use Dover's Powders; he only says, did you ever try them? Lord John—Lord John, you must take care, and not eat too much of that strawberry preserve.' 'How do you do, Mr. K.?—how do you do, Lord Henry? I hope the Marchioness is well? She looked divinely last night. Did you see her when she was dressed, Mr. K.?—' You will pardon me, my lady,' answers the tutor, 'I did indeed see her; but it would be presumptuous in me to speak of such matters. I happened to take her a map,' (mind, doctor, he does not say a map of what,) 'and, certainly, I did cast my eyes on her dress, which was, no doubt, in the best taste, as everything the Marchioness does is.' Observe, here is no mention of her looks or person. Doctors and tutors never presumed formerly to talk about the complexion, and skin, and beauty, of those in whose families they lived or found practice. Why, haven't I told you, over and over again, how Dr. W.—lost his practice from having said that a patient of his, who died, was one of the most beautiful corpses he had ever seen, and that he had stood contemplating her for a quarter of an hour. She was a person of rank, and it ruined him. Even his son, who was a doctor too, and had nothing to do with it, never could get on afterwards.'—*Memoirs of Lady Hester Stanhope.*

A COUNTER-BLAST.—Mr. Paton, in his pleasant work, being a record of travels in Servia, when noticing the romantic and marvellous site of Salko, tells us that its vavode "had a curious

mental malady. Having lately lost a son, a daughter, and a grandson, he could no longer smoke; for when his servant entered with a pipe, he imagined he saw his children burning in the tobacco." It were to be wished, adds the Literary Gazette, that this disease should become contagious, and affect all the many puffers in the streets and public places throughout England. Would that a similar counteracting influence were operative in these United States, where every item of the male sex, from the little urchin that has barely left his mother's leading strings up to the clergyman regards the use of tobacco as one of his dearest rights: which on all occasions and places, whether in church or lady's boudoir, he deems himself privileged to indulge in, after some one fashion or another.

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Sixteenth Annual Report of the Inspectors of the Eastern State Penitentiary of Pennsylvania.*

When noticing, in our June number, the "Reports of the Inspectors, Warden and Physician of the Rhode Island State Prison" we were led to make some remarks on the effects of solitary or separate confinement, which we concluded with a promise "to introduce the testimony and valuable information on prison discipline, furnished in the Report of the Inspectors of the Eastern State Penitentiary of Pennsylvania, including those of the Warden and former Physician, Dr. Hartshorne, and the present, Dr. Given." We proceed now, after a longer interval than was intended, to redeem this promise.

In the article just referred to, we took occasion to point out a fact of some importance in the investigation of the effects of solitary or separate confinement on the health of convicts, which seems to have been generally overlooked, but which has a direct and strong bearing on the question. It is, that a

* Transmitted to the Senate and House of Representatives, March, 1845, pp. 59, 8vo.

change in the mode of life of individuals, by their being transported to a different climate or even locality, and becoming engaged in new and unaccustomed employments and labour, subjects them to disease, varying in intensity and fatality with the constitutions, age, and prior habits of the parties. The change from an out-door life to one of seclusion, may naturally be expected to give rise to disease; but in comparatively small degree, owing to the improved hygienic conditions, in other respects, in which the subjects of solitary confinement according to the Pennsylvanian system are placed. The proper terms of comparison are, between, on the one hand, the inmates of a prison in which solitary confinement with labour is carried out, and, on the other, large classes of the community who are engaged in various trades and manufactures, and lodged, clothed and fed in the best manner in which their limited means will allow in close, crowded and badly ventilated streets, courts and alleys, and who are, of necessity, if they would earn wages for their support, deprived of opportunities for exercise and recreation. Putting aside the criminal view of the case, let us look on the inmates of our Penitentiary as so many shoemakers, saddlers, weavers, &c., and ask how their health compares with a like number of the different trades in our cities; taking the operatives or regular workers of the latter as the persons for comparison. Now, if it should be found, that the former suffer no more than the latter, what complaint applies against the system? Nay, we may go a step farther, and ask whether, if the standard of health were lower and diseases more frequent among convicts, than among operatives out of doors, philanthropy, which can never be separated from justice and equity, requires that we should denounce the system of separate confinement because it does not erect the former into a favoured class, and give, as it were, a premium for crime and criminal excesses. After all, however, we find that the rate of mortality for the year 1844,

among the prisoners in the Eastern Penitentiary, was only 2.61 for both whites and blacks, which is a small fraction higher than the per centage of mortality in England and Wales for a period of five years, viz., 1838-42, in which it was 2.209. The former in equivalent decimals would be 2.610. We are told that the rate of mortality is lower in England than in France, Prussia, Austria, and Russia. Were we to take the mortality of the white convicts alone, it would be but 1.74; the increased proportion being made up of the black convicts. The prisoners in our Penitentiary have, if we except varied exercises and changes of scene, more attention paid to their health than is given to the majority of the community. In, for example, the important considerations of substantial and varied nutriment, and the use of the bath, an approach is made to what thousands of hard working men in our cities, and hundreds of thousands in those of Europe would call a luxurious life. To a certain extent, even out-door labour and exercise are procured for the invalid convicts, as we learn from the report of the Warden, Mr. George Thompson. He tells us:

"The physician has availed himself of the power granted him by law of requiring me to employ separately the invalid prisoners in the cultivation of the large yards between the blocks; a careful officer skilled in horticulture, has superintended those so employed, taking special care that no two should approach or recognize each other: the yards being divided by the buildings makes this task easy, and the prisoner being aware that the privilege so highly valued would be lost by violating the rule, has no inducement thereto. This plan is not only humane, but important in a pecuniary point of view,—both in restoring health, and making those productive who were formerly the contrary. Six gardens are cultivated in this manner, which, during the greater part of the year, can furnish under the Physician's orders separate employment for twelve invalids half a day each: the produce of this labour has been valuable in the support, and conducive to preserving the health of the well prisoners. Between 400 and 500 bushels of tomatoes were one of

the many descriptions of vegetables furnished during the last season."

The practice of bathing the prisoners weekly, as recommended by the late physician, Dr. Edward Hartshorne and the Warden, and urged by the present physician, Dr. Given, has been fully adopted. It is attended with but little expense, and is thus described by Mr. Thompson.—

"The daily escape-steam from the steam engine is passed into a tank containing about eighty hogsheads of water, which thereby is maintained at a temperature of about 90°; ten separate cells, each having a bath, receive the prisoners that are brought separately by their overseers, and are allowed fifteen minutes for bathing; soap, fresh water, and a dry towel being furnished each. By this means 40 can be bathed per hour without any infringement on the separate system,—an officer walking in front of the grated doors of the bathing cells effectually preventing any possibility of communication."

The prisoners are now allowed the use of lights during the winter evenings until 9 o'clock, with results hygienically and morally good; time being allowed them, in this way, both to finish their tasks and to read or take exercise in their cells. "By the Auburn system, the prisoners working in mass cannot remain out of their small dormitories after dark; nor be admitted to their workshops until daylight. Fifteen hours are thus necessarily passed in darkness and idleness, unprofitable both to body and mind." Our prisoners have from 9 A.M. till 7 A.M., a period giving them still more time than is required for sleep.

After learning the mode of life pursued by the prisoners in the Eastern Penitentiary, we shall scarcely wonder at the following language of Dr. Hartshorne, in his semi-annual report, or that for the first six months of 1844; after which his official relations with the Prison ceased.

"Every day's experience has increased my confidence in the working of the system. To say nothing of the comparatively small number, in so depraved a population, of genuine and severe cases of disease, not

contracted out of prison, and the few instances of fatal disorder developed in the cells, we cannot help being constantly struck with the marked improvement among many of the convicts. We repeatedly observe the beneficial effects of the change from a career of dissipation, privation, and exposure, to one of regular and industrious occupation, with plenty of good food, and comfortable quarters. In this manner we are forcibly impressed with the justice of this remark, made years ago by Dr. Bache, in one of his reports:—'The circumstance, indeed, of being withdrawn from the influence of the severer atmospheric vicissitudes, such as wet and cold, which are prolific sources of disease with a large portion of the community, would, of itself, more than compensate for the operation of any unfavourable causes to health, experienced in this prison. But, when it is considered, that many of the individuals sent to our prisons, have been in previous habits of drunkenness and debauchery, the comparative healthfulness of the confinement and mode of discipline must be apparent.'"

"The cells are better ventilated than the great majority of the workshops in which the same classes are employed, at liberty, and as well warmed and lighted; while more time is allowed for rest and recreation than is usually indulged in by the industrious mechanic.

"With all his physical wants properly attended to, and especially with sufficient exercise in the open air, the isolated prisoner suffers no privation not common to all well regulated prisons, except that of the sight of his fellows in disgrace, together with the slight and monotonous change of scene in the daily routine between his cell, the chapel, the mess-room and the workshop. We have then, to inquire, what evil there is in this absence of mute and degraded society, and of daily contracted routine, to justify the outcry that has been made against it."

Of masturbation, Dr. H. remarks:

"In the majority of instances the habit has been contracted, and most freely practised in the publicity of the county prison; and if commenced after committal to the cells is generally soon abandoned. Certain it is that every penal institution is cursed with victims to this destructive vice; but it would be extremely difficult to ascertain what places are the most exempt, since opportunities are sufficiently abundant everywhere for indulgence in the dark."

After some remarks on the alleged

tendency of solitary confinement to develop an attack of insanity, and the difficulties which beset a correct diagnosis of this form of disease, Dr. Hartshorne makes this observation :

"Certain it is that more than one instance has been presented to me where the moral and reasoning faculties, in short, the whole tone of mind had been decidedly improved under the chastening influence of a quiet and industrious seclusion from the haunts of vice, varied only by purifying intercourse, instructive books, and respectable associates."

And again :

"As usual, we have received some prisoners in a state of mental derangement, strongly marked at the time of their admission; and some others who had been previously insane, or were at the time on the verge of insanity. Others, again, have exhibited so low a grade of intellect, as to be but one degree above imbecility; while two or three were perfect idiots."

In confirmation of these remarks, the Warden states, in his report :

"In consequence of there being no State Lunatic Hospital for the poor, many (idiots, epileptic and insane) entirely unfit for our discipline, continue to be sent to this prison, it is impossible to give proper accommodation, in their separate cells, to this class; and each year they continue confirms their malady, causing a heavy charge against the counties whilst here, materially affecting the discipline of the prison, and rendering them most probably a charge on the public for life."

Dr. Given, the Physician to the Penitentiary during the last year, gives us the following information respecting the number of inmates of the prison and the mortality and proportion of those enjoying good health, &c.

"During the year, 497 prisoners have been confined in this Institution; of these, 344 were whites, and 153 coloured. Thus for the former, the per centage of deaths was 1.74, and for the latter, 4.57; or 2.61 for the whole."

"The following is the result obtained by the examination of the physical health of those admitted during the year :

| | |
|---------------------|-------------------------|
| In good health | 51 whites, 17 coloured. |
| In imperfect health | 50 " 20 |

"Or, of the whites, 49.50 per cent., and of the coloured 54.04 per cent.; or, of the whole, 50.72 were received more or less diseased. Three of those admitted during

the last six months of the year were epileptic; and I may add, three others inherit a predisposition to that disease from their parents.

"Of the 136 prisoners discharged, 15 were in improved, 105 unimproved, and 16 in impaired health."

Dr. Given presents some sensible views of the subject, and particularly on the symptomatology of insanity, which we here subjoin :

"The usual attention has been paid to the examination of the physical and mental condition of all prisoners admitted and discharged within the half year; but, even as regards the former I fear only an approximation to the truth can be given, as those coming in are very apt either to conceal or feign illness, as they interpret the motives of the examiner; and those discharged often consider the loss of a few pounds of flesh sufficient evidence of disease, though their feelings in other respects are indicative of perfect health; while the difficulty of arriving at just conclusions as regards the latter is much greater; for those who are acquainted with the protean nature of insanity, its often slow and insidious invasion, and frequent development in the passions and moral sentiments, long ere the intellectual faculties show any sign of disturbance, will readily acknowledge how difficult, nay, how impossible it is in many cases to pronounce, with any degree of certainty, the actual state of a prisoner's mind when first admitted; for if the incipient stages of the disease have frequently escaped for several months the detection of intelligent relatives, in daily contact with the patient (the experience of physicians connected with insane hospitals furnishes many such instances), is it not possible, or, indeed, very probable, that acts are frequently committed under the influence of mental derangement, which is not fully developed until the sufferer may have been long in confinement, as a punishment for his so called crime? I believe that the amount of insanity, originating under any mode of prison discipline, cannot be correctly ascertained until these probabilities are fully acknowledged, and care is taken to learn, as far as possible, the past history of all prisoners in whom that disease has been developed during the first half year of confinement."

Though short, the report of the Moral Instructor, Mr. Thomas Larcombe, is full of interest. He states "that a valuable auxiliary in the department of instruction has been added in the new

library presented by John Bacon, Esq., a member of your board," and then proceeds to observe :

"The amount of public instruction has been considerably increased during the past year. Owing to the almost constant aid of Rev. Dr. Crawford, and the occasional assistance of other ministers of the gospel, there have been 190 sermons and other addresses delivered. Under the many good influences to which the inmates have been subjected, there is reason to hope that there is a general advancement in useful knowledge; and that, in many cases, the seed sown will germinate, and produce such fruits as will amply repay the culture of Christian benevolence.

"It is a peculiar and valuable feature in the criminal system of Pennsylvania, that those who have incurred a comparatively limited degree of moral guilt, are effectually separated from such as are deeply criminal, both in a legal and a moral sense. The former left to his own reflections, desires no companionship with the latter; but the first natural effort of his mind is to recover from his fall; and this effort can be easily assisted by the judicious counsel of the Instructor. Self-respect can be restored, and forms a good basis on which to erect reform, where higher and holier impulses are wanting. Perhaps it is owing to this that a large class of prisoners convicted of crime against the person, are generally restored to usefulness in society upon leaving this Penitentiary, who, if they had been placed at once on a level with the burglar, the forger, and the thief, and exposed to the gaze of the public, would have speedily participated in their character as well as their degradation.

"The whole number of commitments is 138; of whom 77 read and write, 30 read only, and 31 do not read.

"This number of commitments, viewed in connection with the large population of the Eastern District of Pennsylvania, and the proximity of a great city, numbering nearly 259,000 inhabitants, is very small; and it is a subject of congratulation, that while in some states claiming pre-eminence in mental culture and moral virtue, there is one convict to 2700, and even to 1500 of their respective populations, in Pennsylvania there is but one to every 3400 inhabitants. From whatever cause this may arise, it seems to demand our devout gratitude to God."

On this last point, of the smaller proportion of crime in Pennsylvania, the

observations of the Inspectors furnish concurrent testimony, as will appear from the following, being a part of the report transmitted with the authorization of Mathew L. Bevan, President, and Richard Vaux, Secretary :

| | |
|--|---------|
| "By the Census, June 1st, 1830, | |
| the population of the Eastern District of Pennsylvania was | 755,577 |
| City of Philadelphia | 80,458 |
| County of Philadelphia | 108,503 |
| | <hr/> |
| | 188,961 |
| Grand total | <hr/> |
| | 944,538 |

| | |
|--|-----------|
| "By the Census, June 1st, 1840, | |
| the population of the Eastern District of Pennsylvania was | 908,744 |
| City of Philadelphia | 93,655 |
| County of Philadelphia | 264,382 |
| | <hr/> |
| | 358,037 |
| Grand total | <hr/> |
| | 1,266,781 |

"Increase in 10 years, 322,243; equal to 32 per cent., or 3.20 per annum.

"At 3.20-100th per annum, the increase since June 1, 1840, to January 1, 1845, 4 years 7 months, or 14.66-100th per cent., resulting in a present population in our district of 1,452,491 persons.

"From this table, it appears that since the opening of the Penitentiary up to the present time, the increase of the population out of which prisoners come who are convicted for crimes, is about 508,000. While the number of prisoners received remain annually about the same, — or about the same, on an average, for the last ten years.

"The prisons in Pennsylvania are on the Pennsylvanian, or separate system. It is ascertained, that the whole number of convicts in confinement in the two State prisons, Pittsburgh and Philadelphia, is 470. Add to these; convicts in the Philadelphia and other county prisons, gives, say, 650 to 700 for the State. In the year 1826, before the adoption of the separate system by this State, there were about 600 prisoners in one prison (Walnut Street). There are very few more now in the whole State. In the state of New York, where the opposite system of prison discipline prevails, the whole number in confinement in the two State prisons (Sing Sing and Auburn), as taken from the last reports, is over 1600.

"The Inspectors, therefore, in view of these facts, believe that the Pennsylvania, or separate system, is pre-eminently a successful experiment in preventing crime."

After making a comparison, enforced by tabular returns, between the Pennsylvania or separate system, and the Massachusetts and New York, or the gregarious system of confinement—

"The Inspectors believe that the following conclusions irresistibly present themselves, as the result of the above comparison of the two systems."

1. "That the separate system prevents the commission of crime.

2. "That it is pre-eminently calculated to induce and effect reform, in the minds of the prisoners.

3. "That the health of the prisoners is equal to that of any community, and is not, in the least, injuriously affected by the system.

4. "That the mortality, under the separate system, is not greater than that of any other system of prison discipline.

5. "That the discipline, and the proper administration of the system, is superior to all others.

6. "That, of the objections which have been urged against the system, none have been realized."

Need we add, in conclusion, the testimony of the untiring and practically benevolent Miss Dix, in favour of the Pennsylvania system. This lady says:

"Pennsylvania has the high praise of having established a model prison on the separate system which, in its whole plan and government, is worthy of being copied wherever civilized life makes the establishment of prisons necessary for the security of society. I express this opinion in a full confidence, based on extensive knowledge of prisons and prison systems of discipline; and I am satisfied that no unprejudiced, intelligent mind, can examine deliberately and faithfully the wards of the Eastern Penitentiary, and not arrive at the same conclusions."

Cooper on the Anatomy and Diseases of the Breast.*

With the publication of this volume on the Breast is completed the promised edition of Sir Astley Cooper's surgical

* The Anatomy and Diseases of the Breast. With numerous Plates. By Sir Astley Cooper, Bart., F.R.S., &c., &c. To which are added Various Surgical Papers. Now First Published in a Collected Form. Philadelphia: Lea & Blanchard, 1845. pp. 387,

works, by Messrs. Lea & Blanchard; to whom all thanks are due for the regularity and good style in which they have carried out their intentions in this matter.

In the work now before us, we find a detailed description of the Anatomy and Physiology of the Breast, and contributions towards a history of its diseases which are not malignant; these several parts of the inquiry being illustrated by numerous lithographic engravings of great beauty and finish.

Under the head of Lactation in the Human Female is the following judicious summary:

"The secretion of milk may be said to be constant or occasional; by the first, the milk tubes and reservoirs are *constantly* supplied by means of a slow and continued production of the fluid, so that the milk is thus, in some degree, prepared for the child.

"By the *occasional*, is to be understood that secretion which is called by mothers and nurses, the *draught* of the breast, by which is meant, a sudden rush of blood to the gland, during which the milk is so abundantly secreted, that if the nipple be not immediately caught by the child, the milk escapes from it, and the child when it receives the nipple is almost choked by the rapid and abundant flow of the fluid; if it lets go its hold, the milk spurts into the infant's eyes.

"Even the sight of the child will produce this draught, or sudden rush of blood and copious supply of milk, as the thought or sight of food occasions an abundant secretion of the saliva.

"The draught is also greatly increased by the child pressing the breast with its little hands, by its drawing out the nipple by its tongue, lips, gums and by the pressure of its head against the breast.

"In other mammalia, so far as we can judge, a similar process occurs, and the same effect is produced by the animal striking the udder with its head, and forcibly drawing out the teat.

"Observe the foal playing with the teat drawing it out forcibly and striking the udder of the mare with its head; and the lamb sucking for a short time to empty the large reservoir of the gland of the accumulated milk, and then beating the udder of the ewe with its head as if to put it in mind of secreting more to supply its still pressing wants.

"In the human subject the milk is often

so abundant, that a limpet shell is obliged to be worn to catch it, and to prevent the mother's dress from being constantly wet and uncomfortable.

"The mother is quite sensible of the draught, as the feeling it produces is very strong, but she is also informed of it by the sudden escape of milk even when the child is not applied to the breast; if a thought, or irritation of the nipple, excites the sudden secretion.

"The quantity of milk which can be usually squeezed from the mother is about two ounces from one breast, but necessarily varies with the state of the health and mode of nutrition; as to the quantity produced by the draught I know of no means of accurately ascertaining it.

"A woman who milked her right breast for my information, and whose child was four months and a fortnight old, produced —

| | |
|-------------------------|-----------|
| On the Saturday Morning | 2 oz. |
| " Sunday Morning | 2 " 2 dr. |
| " Monday Morning | 2 " |
| " Tuesday Morning | 2 " 6 " |
| " Tuesday Evening | 1 " 3 " |

"At seventeen months after delivery, a woman milked out 2 oz. when the child had been seven hours absent from the breast.

I have often had this experiment made, and have almost constantly found that the morning's milk is greater in quantity than that of the evening, and the same observation generally applies to the cow.

"As to the quality of the milk, judged of by the quantity of the cream, it varies with the health and mode of nutrition of the mother.

"The secretion of milk will continue for many years in a healthy mother, if it be encouraged by the application of the child to the breast; and many women continue to suckle in a belief that it lessens the tendency to pregnancy, and others from the better motive of believing it to be the best food for their child.

"A woman had abundance of milk at eighteen months after delivery; another suckled her child for twenty-one months, and the child had no other food. Mr. Wakefield, of Battle Bridge, Pentonville, told me that he knew a woman who had suckled her two successive children, at the same time, and I have heard of an instance in which a wet nurse suckled two consecutive children.

"In general, women give up suckling when they become again pregnant, because gestation generally diminishes the quantity and impairs the quality of the milk.

"Mr. King informed me that when travelling in the Arctic circle (?) he had seen an Esquimaux boy play out of doors with his bow and arrow, and come into a hut, to receive the milk of his mother's breast; and many children in our own country play about a room and then run to their mother's breast; and sometimes fetch a stool to stand upon, whilst they pursue the process of sucking.

"Nine or ten months is, however, a good general time for weaning the child, when it is provided with teeth, and can take other food for its nourishment; but this depends upon so many circumstances of health and convenience, that it must be left to the feelings of the mother and the judgment of the medical attendant to determine upon its propriety."

More minute chemical details of the composition and properties of milk in the different mammalia were furnished to the author, at his request, by Dr. Golding Bird, and are now issued in the pages of this volume.

Sir Astley took some pains to ascertain the food used by mothers and nurses in different countries and by different classes. The result of his inquiries is here subjoined:

OF THE FOOD OF THE MOTHER OR NURSE.

"It appears that the quantity and quality of the food taken by mothers and nurses is often greater than is absolutely necessary: indeed, absurdly and unnecessarily abundant. A mother who reared ten very healthy children and never failed in her milk, adopted the following plan of diet:

"Her breakfast was *café au lait* with bread and butter. At one o'clock, P.M., she took hot meat, and drank half a pint of porter. At six o'clock, she dined plainly upon meat, but drank half a pint of porter and two glasses of Port wine. At ten o'clock, P.M., she took a slight supper of meat, and drank half a pint of porter. She suckled early in the morning, frequently in the day, and the last thing at night. During the night, the child was fed upon barley-jelly, gruel, flour and milk, milk and arrow-root if the bowels were relaxed. Her general food for the child was flour tied in a cloth boiled in water, dried and grated into milk with sugar.

"It appears, however, that this diet for the mother is unnecessarily abundant and stimulating.

"The Welsh women live, whilst they suckle their children, upon barley-bread, oat-cake, cheese, and oatmeal, and bacon with leeks, and other vegetables boiled together, into what they call cowl. No beer nor wine, but milk and water, or butter-milk, are their drinks. The woman is often moving about her house in the fourth or fifth day after parturition. They are affectionate mothers, and their infants are generally very healthy.

"In Ireland, Dr. Woodroffe of Cork informed me, in reply to some questions I put to him :

Q. "What is the diet of the poor women in Ireland, whilst they are suckling ?

A. "Potatoes, milk, stirabout, and occasionally a little fish.

Q. "What work are they called upon to do whilst they are nurses ?

A. "They work in their fields and gardens, and are engaged in their domestic concerns.

Q. "How long do they generally suckle, and do you know of any individual cases of the child continuing to be suckled for a long period ?

A. "Never less than *twelve*, but more generally for *sixteen* or *eighteen* months. I have known many instances of children being suckled for *two* years, much to the detriment both of mother and child. Amongst the lower classes, there is a strong prejudice in favour of weaning the child on particular days; and to accomplish this object, they often continue to nurse their child *five* or *six months* longer than they otherwise would.

Q. "Do they carry the child with them whilst at work, or do they go home to suckle ?

A. "The child is left at home; women do not go from their own dwellings, but work in the adjoining fields and gardens.

"In Scotland and in the north of England, where the women work hard, in a few days after parturition they occupy themselves with the business of the house, and even very soon go out into the fields to work. The child is also carried out by another child, and is placed under a hedge or wall, and if the mother hears the child cry, she suckles it, or does so, from her belief of its wants. The food of the mother is ground oatmeal and milk, flour and milk, potatoes sliced and fried in fat.

"A lady who was much in the habit of visiting the poor for charitable purposes, states, however, that she observed that nurses who work hard, and are indifferently fed, are weak and exhausted, and appear old at an early period of life.

"Dr. Merriman, to whose judgment, experience, and authority, every one would defer, informs me that a patient of his engaged a nurse who suckled her two following children, and altogether she was a nurse for nearly, if not quite, three years. The children were strong and healthy, but the nurse was reduced to such a state of weakness and ill health, as to be incapacitated from any useful labour. The family felt that she had ruined her health in their service, and they kept her, but no longer as an efficient servant.

"Some kinds of food in the better ranks of life, disagree with the mother and the child by affecting the milk; as salads, pickles, sour fruit, cucumbers, melons, and acids. The lady to whom I alluded, who had nursed ten healthy children, had her own bowels irritated as well as those of the child she nursed, by drinking a glass of Champagne, or of any acid or fermenting wines or liquids.

"In general the menstrual or sexual secretion ceases soon after gestation begins, and it does not re-appear until after lactation has been nearly completed; the woman then finds that the quantity of milk lessens, and that which is secreted disagrees with the child, and is often refused by it from being disagreeable, and therefore the infant frequently weans itself.

"But it sometimes happens that the sexual secretion continues during lactation, and women have assured me, that they and their children have been healthy. A woman who suckled 16 months had the menstrual secretion during the last seven, yet her milk was abundant and the child healthy. These, however, must be considered as exceptions to general rules, for usually, if menstruation occurs during lactation, such a change is produced in the child's health and bowels, that a medical man is led to ask if the secretion has not returned; the woman also suffers from the great call upon her constitution which this double secretion produces, from the difficulty of supporting both at the same time."

A portion of the work is devoted to the "Comparative Anatomy of the Mammary Gland," in which we note the following *Observations* on the milk of the cow :

"*Observations.*—A moderately good cow will give when in full milk, from twelve to twenty quarts per diem, varying with its pasture.

"A very large and good cow, milked

three times per diem, has been known to yield thirty quarts.

"At the close of each milking, the milk is richer than in the beginning.

"More milk is given by the cow in the morning than in the evening.

"More cream is given out in winter than in summer.

"The milk left by the calf is good.

"The milk suffered to stand separates its cream or oily part, which being specifically lighter than the milk, rises to the surface: it is composed of numerous globules of unequal sizes, which may be entirely separated from the milk by frequent filtration.

"The proportion of cream necessarily varies with the richness of the milk, the goodness of the pasture, and the period from calving.

"1 month, Cream one-eighth; Milk one-eighth; — 2 months, Cream one-seventh; Milk one-seventh; — 3 months, Cream one-sixth; Milk one-sixth; — 4 months, Cream one-fourth; Milk one-fourth; — 5 months, Cream, one-eighth; Milk one-eighth; — 6 months, Cream one-eighth; Milk one-eighth; — 8 months, Cream one-eighth; Milk one-eighth; — 9 months, Cream one-seventh; Milk one-seventh; — 10 months, Cream one-sixth; Milk one-sixth.

"If the milk be skimmed again after twenty-four hours, the proportion of cream is larger.

"This table shows that the variety is from one-fourth to one-eighth, but one-eighth is a frequent proportion, and eighth parts of milk produce a quart of cream.

"The most cream is given out in a broad vessel from two to three inches deep.

"The cream is thicker in cold than in warm weather.

"Cream consists of butter and butter-milk. The butter is produced by agitation of the cream, in an upright or turning churn, or by agitating the cream in a bottle.

"A quart of cream produces a pound of butter.

"If butter be melted, and some curd removed from it, the butter will keep a great length of time.

"The butter-milk, which remains when the butter is made, still contains some butter, curd, and sugar.

"Oil separates from cream, if it be either heated, or kept long.

"After the separation of the cream, another spontaneous change occurs, which is the formation of an acid (lactic), which separates the curd; or it may be separated by rennet.

"The curd dried and pressed forms cheese.

"It may be separated by acids and alcohol, to form cheese; and a kind of cheese may be formed from the serum of the blood by precipitating its albumen by acids.

"When the curd is separated, the residue is whey.

"The whey when evaporated deposits the sugar of milk.

"Of the Colostrum. — The milk given for two or three days after calving is often bloody. In this state, the cream and milk are not properly separated, and there is a thick yellow substance, which looks like cream, occupying a considerable part of the fluid which has been drawn.

"On the first day, this yellow substance occupied twenty measures out of twenty-four.

"On the second day, the yellow matter was three in twenty-four measures.

"On the fifth day, the yellow matter was cream 4, milk 20.

"On viewing the colostrum with a magnifying glass, it showed, under the fourth of an inch lens, a network composed of numerous flakes; each flake containing milk globules in the progress of their formation, but not yet completely separated.

"The particles of milk under the microscope appear oily. They are rounded, but not uniform in size. If the glass upon which they are placed is inclined, they roll down in a beautiful avalanche."

"The 'Surgical Papers' with which the present volume is concluded are on various subjects; some of them important operations with which the name of Sir Astley Cooper has become closely associated; such, for example, as perforation of the membrana tympani for the cure of deafness, the extraction of calculi from the bladder without a cutting instrument, ligature on the aorta, &c. The history of some is made the more interesting by the circumstance of a description of the parts being given, on the death of the individuals many years after the operations had been performed.

Velpeau's Midwifery.*

The merits and reputation of the work

* An Elementary Treatise on Midwifery; or Principles of Tokology and Embryology. By Alf. A. L. Velpeau, M.D., &c., &c. Translated from the French by Charles D.

M. Velpeau on Midwifery have been long and diffusively known in the United States — thanks to the zeal and industry of our friend, Dr. C. D. Meigs, translator — that we are not called on now to advance any argument in favour.

The notes by Dr. Harris, in addition to the still more numerous ones by Meigs retained from the second edition, contribute to the elucidation of the text, and a better comprehension of the entire subject. We might infer from comments on certain points introduced by the new editor, as where he repeats some hypotheses about the nature of the menstrual fluid, but his description of its true character according to recent physiologists, as tested by chemical analysis. There is no great diversity of opinion in that advanced by Harris, as if it were original with him, viz., that "the female is greatly indebted to the menstrual [uterine] function for the delicacy of her beauty and effeminacy of her character." His deductions from the sight of bearded females are too sweeping; as many a married mother, and some most charming women who have a similar capillaryowment can testify. We do not know the editor's politics, but discover that he is in favor of annexation, when he assigns the anus in addition to the common boundaries of the perineum, so as to make this latter extend, in its greatest length, from the posterior commissure of the vulva to the point of the os.

The chief addition by the new editor of Velpeau consists of a chapter on Puerperal Fever, in which we find a sketch of the general outlines of the subject.

Dr. Harris, Member of the American Philosophical Society, Professor of Midwifery in Jefferson Medical College, &c. Third American Edition. With Notes and Additions. By William Harris, M.D., Member of the American Philosophical Society, Lecturer on Midwifery and the Diseases of Women and Children, &c. Philadelphia: Lea and Blakiston. 1845. pp. 600. 8vo.

Considering the former relations of Dr. Meigs to the work, it would have been as well to introduce his opinions and practice on this subject with more than a single passing allusion.

We are not apprized whether the third American edition has been revised after the second edition of the original work of 1839. On one point we have ground of complaint, viz., in the want of an Index, by which a ready reference to subjects in the body of the volume is prevented, and in degree its utility somewhat lessened. After all, however, the substantial merits of this Treatise by M. Velpeau will continue to procure for it a ready reception among students and practitioners of Midwifery.

Neill's Outlines of the Arteries.*

We may congratulate students of anatomy on the aid furnished to them by Dr. Neill, in these Outlines of the Arteries, which consist of six colored plates, including thirteen figures, with the name of each of the vessels affixed. By this means, one sees at a glance both the situation and name of the artery; and thus the trouble and embarrassment of references to another page are saved. In the body of the volume are given the course and connections of each artery, with, at the same time, designation of the figure and plate in which it is exhibited in outline. An Index of all the arterial vessels facilitates, still farther, the work of reference, when this is needed.

The author's success with this volume on the Arteries makes us look forward with pleasure to the publication of a companion, also under his direction, on the Nerves.

* Outlines of the Arteries. With Short Descriptions. Designed for the Use of Medical Students. By John Neill, A.M., M.D., Professor to the University of Pennsylvania, Physician to Wills's Hospital, Lecturer on Anatomy, &c., &c. Philadelphia: Barrington & Haswell. 1845. pp. 30.

THE BULLETIN OF MEDICAL SCIENCE.

VOL. III.]

Philadelphia, October, 1846.

[No. 10.]

CHEMICAL COMPOSITION OF THE BODY.

(From *Ranking's Half Yearly Abstract of the Medical Sciences.*)

1. *Protein Oxides.* Mulder* has continued his researches respecting the oxidation of protein with the greatest success. He has clearly established the existence of two distinct oxides of protein, to which he has assigned the names of binoxide and tritoxide of protein, because the former contains two or the latter three more atoms of oxygen than pure protein does. Before proceeding to notice these compounds further, we may remark that recent analyses have confirmed the accuracy of Mulder's original formula for protein ($C_{40}H_{31}N_5O_{15}$), and have shown that it gives results approximating more closely to the truth than the formula $C_{48}H_{36}N_6O_{147}$ adopted by Scherer and Leibig. It has been known for some time, that by certain chemical manipulations, a substance may be obtained from protein, whose formula is $C_{40}H_{31}N_5O_{15} + HO$, and to which Mulder applied the term *oxy-protein*. This is the substance to which he has now given the more descriptive name of tritoxide of protein, without, however, intending to imply anything more than it contains three atoms more oxygen than protein. His recent investigations have elicited the following facts. When fibrin or albumen is boiled with water, in the course of about four hours, principles are always obtained which are soluble in water, whilst the greater part remains undissolved. On repeating the ebullition every four hours with fresh water, fresh soluble matter is extracted, the insoluble portion becoming poorer in carbon, hydrogen, and nitrogen, but richer in oxygen, until the composition is finally constant. Moreover, the portion of albumen or fibrin soluble in water, when

evaporated, extracted with alcohol, and treated with cold water, is almost entirely soluble in it; and likewise contains less carbon, hydrogen, and nitrogen, but more oxygen than protein. The substances taken up by the alcohol are merely products of the decomposition of the soluble portion of the fibrin or albumen; and it is to them that we must attribute the ammonia produced on distilling albumen or fibrin with water. The soluble matter obtained in this way is, in every respect, identical with the tritoxide of protein, to which we have adverted; it exists, moreover, ready formed in the buffy coat of the blood, and may be obtained from it by a short ebullition. The following are its principal characteristics:—It is soluble in cold water, but not in alcohol, ether, or any oils. It is perfectly neutral, and is precipitated, in the same manner from its aqueous solution, by dilute nitric, sulphuric, hydrochloric, neutral and basic phosphoric, and tannic acids: by solutions of chlorine, bichloride of mercury, neutral and basic acetate of lead, nitrate of silver, sulphate of zinc, and peroxide of iron. It forms with metallic oxides a class of double salts, composed according to the formula $(C_{40}H_{31}N_5O_{15} + MO) + (C_{40}H_{31}N_5O_{15} + HO)$. Tritoxide of protein is not precipitated by dilute acetic acid, neutral salts of potash and soda, chloride of barium, hydrochlorate of ammonia, nor by that very delicate test for protein, ferrocyanide of potassium. It dissolves gradually in solutions of potash, soda, and ammonia. When thoroughly dried, it forms an amber-coloured powder.

Let us now revert to the undissolved residue, which ultimately assumes a uniform composition, expressed by the formula $C_{40}H_{31}N_5O_{14}$. It is this which is first formed from protein by the influence of the oxygen of the atmosphere. The other substance (tritoxide of protein) originates from it by the addition of another equivalent of oxygen. In this respect albumen and fibrin give different results.

* *Annalen der Chem. und Pharm.*, vol. 47, p. 300; und *Versuch einer allgemeinen physiologischen Chemie*, p. 317.

Albumen, without going through this preparatory change like fibrin, is at once converted into tritoxide of protein by ebullition; the insoluble portion which remains being unaltered albumen. From its composition it has received the name of binoxide of protein. It exists ready formed in the buffy coat of the blood. Von Laer has obtained it from hair in the following manner:—the protein is first thrown down by the addition of a little acetic acid to a solution of hair in potash. On the addition of a larger proportion of free acid, after the removal of the protein, another substance, previously in a state of solution, is precipitated. This is binoxide of protein. Von Laer describes it as a bright yellow precipitate. After being carefully washed and dried, it appears as a black, glossy, resinous mass, which, on being pulverized, forms a dark, amber-yellow powder. It is insoluble in water, and alcohol, but dissolves perfectly in dilute acetic, hydrochloric, nitric, and sulphuric acids. Ferrocyanide of potassium precipitates it from its acid solutions. It is soluble in potash and ammonia.

In order to obtain these products of the oxidation of protein, by boiling fibrin in water, it is essentially necessary that there should be free access to the atmospheric air.

The products of the oxidation of protein occur constantly in the blood; they are formed in the lungs from fibrin, a substance which has been shown by Scherer to possess the property of absorbing oxygen, when in a moist state.

In inflammatory conditions, a considerably larger quantity of protein in an oxidised state is contained in the body than occurs in a normal condition of the system.

2. *Fibrin*. Zimmermann* has made some experiments on the solubility of fibrin in saturated solutions of various salts; but as the fibrin was obtained from the buffy coat of the blood, which has been shown by Mulder's researches to consist of the binoxide and tritoxide of protein, and which, probably, contains no true fibrin, it is unnecessary to state his results.

Wurtz finds in the products of the putrefaction of fibrin, exposed in summer for eight days to the air, albumen, carbonic acid, acetic acid, butyric acid, and ammonia. He infers from the occurrence of butyric acid, that fibrin, and perhaps other protein

compounds, may be transformed into the neutral fatty bodies, which are so closely connected with the volatile fatty acids.

3. *Albumen*. Wurtz has succeeded in removing from the albumen of white of egg all the inorganic matters, which have been supposed, by certain chemists, to be the cause of its solubility in water. Neither its solubility, nor any of its chemical characters, appeared in any degree affected.

Hoffman† inserted a square inch of the mucous membrane of the duodenum of a calf, into a vessel containing serum of the blood. In the course of eight days (a temperature of about 90° being preserved), a coagulum, occupying half the original volume of the serum, had formed; the supernatant fluid was no longer alkaline, did not coagulate on heating, had a gaseous odour, and was covered with a white film. From experiments made on the coagulum, he conceives that the albumen is converted in this experiment into casein and fibrin. The chemical proofs of such a change are, however, defective.

Hruschauer‡ has published an elaborate essay, with the view of proving that albumen is an acid. The experiments have been repeated, and the conclusions denied, by Berzelius.

4. *Ammonia given off by Albuminous Fluids*. M. Turck‡ communicated a memoir to the Academy of Sciences on the chlorides occurring in albuminous fluids. All the albuminous liquids he has yet examined, viz., the saliva, serum of the blood, and white of eggs, are continually disengaging ammonia. He conceives that this gas is due to the simultaneous presence of muriate of ammonia and caustic soda in these fluids. The soda becomes converted into a muriate, and ammonia is then slowly liberated. In fresh albuminous liquids there is not the least taste of chloride of sodium, it is only in virtue of this reaction that this salt is progressively formed. While the soda is replacing the ammonia, a very singular phenomenon of crystallization is exhibited. Mr. Turck concludes by observing, that the evolution of ammonia from albuminous liquids forms an important part in the animal economy.

5. *Lactic Acid*. The existence of this acid and of its salts in the animal fluids is denied *in toto* by the Giessen school. En-

* Pharm. Centr. Blatt, 1843, p. 614; and the Annual Report, &c., by Berzelius. French Ed., 1845, p. 371.

* Ann. der Chem. und Pharm., vol. 46, p. 118.

† Annual Report, &c., by Berzelius, p. 348.

‡ Gazette Méd. de Paris, Feb. 8th, 1845.

derlin,* acting under the superintendence of Liebig, analysed the ash of the blood of man, the ox, the sheep, the calf, and the hare, the ash left by the incineration of the saliva and the fæces of man, and the ash of the flesh of the ox. Although the occurrence of carbonates in the ash would be no proof of the existence of lactates, their absence is usually regarded decisive proof of their non-existence, since the lactates with fixed bases are converted, by a red heat, into carbonates.

According to Enderlin, the addition of an acid to the ash caused no effervescence; and in this manner, the non-existence of a carbonate in the ash, and consequently, as he supposes, of a lactate in the substance from which the ash was obtained, was demonstrated. Enderlin likewise endeavoured to obtain lactic acid in the form of lactate of zinc from the extractive matters of blood, but always without success, unless a little lactic acid had been previously added. Moreover, Liebig and Haidlen have disproved the existence of lactic acid in the urine and milk respectively.

Berzelius, upon whom Liebig charges the offence of first introducing lactic acid into the list of constituents of the human body, seems still unwilling to yield the point. In his report for the past year he observes, in relation to Enderlin's results, that "his experiments sufficiently prove that he has found no traces of lactic acid in the blood. It is possible, however, that others may be more fortunate."†

Pelouze,‡ to whom, in connection with Gay-Lussac, we are indebted for a great part of our knowledge regarding lactic acid, seems by no means inclined to agree with Liebig and Enderlin in the exclusion of this acid from the constituents of the animal body. "Lactic acid," he observes, "is one of the most abundant substances in the animal economy and in vegetables, and it seems sometimes to perform an important part. It exists naturally in milk, and is abundantly formed during the spontaneous acescence of that fluid. MM. Bernard and Barreswil have just proved its existence in the gastric juice. It results from some observations of M. Gobley, not yet published, that it is also found in a free state in the white of egg. . . .

I will add, without fear of contradiction, that it is to be regretted that the

numerous analyses which have been made of the organs and of the secretion of animals, have not always been preceded by a more profound examination of the constituent principles of these organs and of these secretions."

We have reason to believe that considerable light will be thrown upon this subject by some experiments that are being conducted at the present time.

SECRETION.*

The following observations on the chemical laws that govern secretion are worthy of attention. They are extracted from the "Chemistry of Vegetable and Animal Physiology" of Mulder.

"It is a property of the chemical forces which are active in any substances to excite analogous forces in others. We notice this especially in organic nature, and it is nowhere more strikingly illustrated than in the nutrition of animals. Blood, a homogeneous fluid, circulates through very different parts of the body. In the muscles it sustains muscles; in the liver it supplies the component parts of the liver, and from it the bile is there secreted; in the kidneys it maintains their various parts, and secretes the urine, &c. None of these secretions appear in the blood with their peculiar qualities; of some there is not even a trace found in it. But the four organic elements of the whole are to be found in protein and its modifications, in the colouring matter of the blood, &c. The elements of the protein might no doubt be transposed to the liver, &c., by means of catalysis, and so the component parts of the liver and bile be produced from it. It would only be necessary then that the constituent parts of the liver should be put in contact with the component parts of the blood, and the forces of affinity resident in the substance of the liver would not require to influence those in the protein, or to produce any chemical alterations in its component parts. Other changes, however, ought undoubtedly to be considered. For instance, a change in its component parts takes place in the liver itself, and, from the first, chemical forces actively operate therein: for a continual change of its component parts is a chief characteristic of every living organic substance. These forces may disturb the chemical equilibrium of other substances, and cause the formation of new products. If the constituents of the blood,

* *Annal. der Chem. und Pharm.*, vol. 46, p. 164.

† Report on the Progress, &c., French Edit., p. 373.

‡ *Journ. de Pharm. et de Chimie*, Jan. 1845.

* For this and the two following articles, we are indebted to Ranking's Half Yearly Abstract.

the combinations of protein, the colouring matter, &c., enter the liver when it is in a state of action, and are there put in contact with the bile during its secretion, and with the substance of the liver itself, which is in a state of continual alteration, then the result will be, that this change of their component parts having taken place, the action will be transferred to the elements of the blood, and will maintain the secretion. If, on the other hand, the constituents of the blood are in a continual change, then the circle of action in which they are involved will extend to the mass of the liver, and so with every organ.

"We have, however, no more knowledge of the manner in which this secretion originally commences — whether it proceeds from the blood, or from the secreting organ, or whether each of these contributes its part, than with the manner in which the first germ of the whole organ, the liver, is produced, or in which the germ of the animal is converted into the animal. But the continuance of the action — the duration of secretion — entirely corresponds with some other phenomena which we may observe separately, and which therefore throw light upon these animal actions. This is the case especially with fermentation, from which Liebig has drawn many illustrations, for the purpose of clearly exhibiting his ideas; and with the same view we shall also avail ourselves of the same process. Yeast changes sugar into carbonic acid and alcohol, and is at the same time changed itself. The latter change causes the former, and is only transferred to the sugar. If we substitute blood for yeast, and the liver for sugar, we may form an idea, more or less, of the secretion of the bile. The component parts of the blood are continually undergoing change. This constant change of the component parts in organic bodies is a chief cause of the continuation of their existence. The liver, without intermission, assumes new parts, and loses others. This process we call nutrition. At the same time that the parts of the blood in the substance of the liver are thus undergoing change, chemical forces are excited; these forces are transferred to the elements of the blood, and so are enabled to produce from them the bile. This takes place the more easily, as the blood itself is also in a state of continual alteration, and thus readily yields to the impulse which, in some way or other, is communicated to it. As the impulse varies so does the effect. Hence that great diversity in the secretion of very dissimilar

substances which are in a state of alteration, from the same fluid, that is, the blood, which is itself at the same time in a state of decomposition. From the nutrition of the cellular texture, however, which must be produced from the component parts of blood, and from the nutrition of all the secreting organs — which, besides producing the secretion, maintain themselves by separating what they require from the constituents of the blood — we learn that catalysis cannot be left out of consideration in the mere process of nutrition. Further, we must apply the same principle to all the solid parts of the body which are compounds of protein. The museles, for instance, have the property of secreting protein from the blood, and converting it into fibrin; on the other hand, when protein is deficient in the blood, this fibrin is taken from the muscles, and converted into blood-protein, as in cases of long continuance and in emaciation. Museles have thus the property of forming muscle-fibrin by simple contact, if protein abounds in the blood; and this result can be ascribed only to a cause similar to that by which crystals gradually accumulate from solutions of salts. It is at least a peculiar action, different from ordinary chemical action, which takes place when the plasma of blood is transformed into museles, which in composition do not essentially differ from the plasma. The same is the case with the production of hair, nails, and permanent bones."*

THE GASTRIC FLUID, ITS NATURE AND PROPERTIES.

M. Blondlot has recently published, in Paris, a *Treatise on Digestion*, detailing very numerous experiments made upon a dog, in which a fistulous opening into the stomach was maintained for upwards of two years. The gastric juice was obtained in very large quantities. Submitted to distillation, the fluid passing over did not exhibit the slightest acid reaction, whilst the residue in the retort was always strongly acid. It is therefore certain that the acid of the gastric fluid is neither hydrochloric nor acetic acid, since both these are volatile. The gastric fluid of other animals gave the same result, on

* Versuch einer Allgem. Phys. und Patholog. Chemie, p. 27; or Fromberg's English Translation, pp. 33-40.

being distilled. When chalk or any other carbonate of lime is added, no effervescence ensues, which further proves the acid not to be the lactic. M. Blondlot concludes that the acid reaction of healthy gastric juice is owing to the presence of superphosphate and biphosphate of lime. He adds—1st. That there is no other acid which can remain acid, and fail to decompose carbonate of lime. 2d. That sulphuric acid, added to gastric juice, precipitates an abundance of sulphate of lime, and oxalic acid precipitates oxalate of lime. 3d. Potass, soda, ammonia, and lime water, produce abundant precipitates of neutral phosphate of lime. 4th. That calcined ash of gastric juice is not deliquescent, dissolves without effervescence in hydrochloric acid, forming chloride of calcium; it therefore contains neutral phosphate of lime, the excess of acid being drawn off in the calcination.

M. Blondlot also made many experiments to determine whether, during digestion in the healthy stomach, lactic acid is formed by the transformation of sugar, starch, or other substance, and his conclusion is, that it is never found. He could never find even a trace of it, although he analysed the fluid expressed from the contents of the stomach, after remaining in the stomach various periods. He conceives that the acid of the gastric juice prevents the lactic acid fermentation, just as other acids are known to do under other circumstances. In confirmation of this, M. Blondlot relates many experiments upon birds and ruminating animals, which show that the formation of lactic acid in these creatures takes place only in those parts of the alimentary canals where no acid is present—namely, in the crop of birds, the first and second stomach of ruminants, and the cæcum of man, and other animals. He first proves that the acid found in these cavities is not secreted by their walls. Feeding sheep, goats, chickens, and pigeons, on food destitute of sugar, and examining the fluid found in the cavities mentioned, he found it invariably alkaline. On the other hand, the addition of sugar to the food produced an acid fluid in the same cavities which proved to be the lactic. The contents of the cæcum are not more acid than those of the small intestines, ex-

cept sugar has been taken in the food; but when sugar has been taken, it undergoes the lactic fermentation in the cæcum. These experiments agree with those of Mr. Ross, published in the *Lancet* for January 20 and February 10, 1844. Tiedemann and Gmelin found an acid in the crop of a pigeon, which had fed for several days on nothing but meat; but this, as M. Blondlot shows, probably had regurgitated from the stomach—an incident requiring precautions to prevent, after death.

M. Blondlot believes that the digestive property of gastric juice depends, not on its obvious chemical constitution, but upon a peculiar organic principle. If exposed to a temperature of 104° to 122° Fahr., or higher, it loses entirely and irrevocably its digestive powers, although, to all appearance, and even as to its composition, as made known by analysis, it remains unchanged. With the exclusion of the air, gastric juice may be kept for two years without loss of its activity; but with the free access of air, it putrifies in five or six days, although the chyme which it forms from nitrogenous organic substances may be preserved for two or three months without change. The precipitation of all the lime it contains does not affect its activity, nor are its chlorides indispensable, but whatever acts upon its organic constituents, heat, strong alcohol, or strong acids, or which removes them, such as animal charcoal, chlorine, tannic acid, or acetate of lead, destroys all its digestive properties.

M. Blondlot also shows—*a.* That coagulated albumen resists the action of the gastric juice only from its compact form. When coagulated in very small particles, as white of an egg beaten into a froth and poured into boiling water, it is digested as quickly as soft fibrin. *b.* That the action of the stomach in coagulating milk is not due to its digestive principle solely, but to its acid, which acts like lactic acid. *c.* The effect of the gastric fluid upon bones, whether entire or not, is to disintegrate the matter slowly, beginning at the surface, and to reduce the earthy matter into a fine chalky powder, but without dissolving or decomposing it. The earthy matter not being dissolved, proves that no hydrochloric acid has acted upon it; it is all discharged with the feces.

The physiological results of M. Blondlot's experiments confirm those of M. Beaumont, which are already familiar to our readers.

Since the work of M. Blondlot was pub-

lished, two other French chemists, MM. C. Bernard and C. Barreswil have made an experimental investigation into the properties of the gastric juice. They start with the assumption that this fluid owes its digestive properties to the union of two principles: 1st, an acid; 2d, a peculiar organic matter destructible by heat. What is the nature of the acid? "The principal fact which has been adduced to prove that the acid reaction is owing to the presence of biphosphate of lime is, that it may be treated with carbonate of lime without effervescence. Our experiments show that this arises from the dilution of the acid, which allows the carbonic acid to be dissolved as it is formed. When, therefore, the gastric juice is concentrated, it causes a considerable effervescence with chalk. Moreover, gastric juice dissolves neutral phosphate of lime, whilst this salt is entirely insoluble in solution of the biphosphate." On distilling gastric juice, the first distillate exhibits no acid reaction. If a mere trace of acetic acid or acetate of soda is added, and afterwards distilled, it gives an acid reaction; the normal acid is not therefore acetic. This also appeared, at first sight, to prove it could not be hydrochloric acid, but by distilling water rendered slightly acid by hydrochloric acid, nothing passes over at first but pure water, the acid not distilling until the end of the operation. On distilling gastric juice, a neutral limpid liquor passes over, which does not precipitate with nitrate of silver; but when about four-fifths has distilled over, the distillate is perceptibly acid, yet, nevertheless, it does not render a solution of nitrate of silver turbid; but, at the end, and when only a few drops of the gastric juice remain in the retort, an acid liquid passes over which precipitates salts of silver; this is, doubtless, hydrochloric acid. Does this acid exist free in gastric juice, or has a chloride been decomposed in this operation? When the least trace of oxalic acid is added to gastric juice which we know contains lime, a turbidity is produced from the formation of an insoluble oxalate of lime; but if to water acidified with 2000ths of its amount of hydrochloric acid, and containing chloride of lime, the same re-agent be added no turbidity ensues. This clearly proves that hydrochloric acid exists as a chloride in the gastric juice, and not in a free state.

When concentrated by evaporation, gastric juice is strongly acid, effervescing with chalk and not losing its acid reaction in

the presence of an excess of the chalk. This proves the presence of *phosphoric acid*. On saturating the acid with lime and oxide of zinc, and filtering the solution, the neutral filtrate contains both zinc and lime, therefore the phosphoric acid is not the only free acid in the juice. What is the acid combined with the zinc and lime in the filtered solution? It is one which, as we have seen, passes over at the end of the distillation, and does not precipitate salts of silver. These characters belong to lactic acid. On distilling water slightly acidulated with lactic acid, and a small quantity of chloride of sodium added, it presents a complete analogy to gastric juice; first, pure water passes over, then an acid which does not precipitate salts of silver, and the last drops carry over hydrochloric acid. So that it is evident that the presence of hydrochloric acid in the last product of distillation of the gastric juice is owing to the decomposition of the chlorides by lactic acid.

Hydrochloric acid cannot exist in a free state in presence of a lactate, a phosphate, or an acetate. "We have observed," say the authors, "in the acid of the gastric juice all the characters of lactic acid as pointed out by M. Pelouze; both give soluble salts of lime, barytes, zinc, and copper, a double salt of copper and lime, deeper in colour than the simple salt, a salt of lime soluble in alcohol, precipitated by ether." From the above facts, MM. Bernard and Barreswil conclude that the acid reaction of the gastric juice is not owing to biphosphate of lime, but arises from a free acid, which is not hydrochloric acid or acetic acid. They have always found lactic acid, with a minute proportion of phosphoric acid, the latter being a product of the reaction of the lactic acid on the phosphates present. According to their opinion, lactic acid is a constant production of the stomach. They do not mean to say that the digestive powers of the gastric juice are owing to the lactic acid; on the contrary, they think if an acid reaction be indispensable other acids may supply its place, because among the various salts constantly introduced into the stomach with the food, some will have their acid replaced by the free lactic of the stomach, and the new acid liberated may supply the place of the normal acid.

M. Melsens* has also examined the gastric juice, and denies the accuracy of Blondlot's experiments.

* Journal de Pharmacie, Jan. 1845.

TRANSFORMATIONS OF THE SUGAR IN FOOD.

M. Chossat found that of many birds fed on sugar alone, none lived more than sixteen days; and he thought he observed that in those which had copious bilious evacuations, no unusual quantity of fat was accumulated in the body; but in those in which these discharges did not occur, fat was abundantly formed. He assumed, therefore, that the sugar is, under varying circumstances, sometimes converted into the constituents of fat, and sometimes into those of bile. But the experiments of M. Letellier,[†] which were more carefully made, contradict these. Their results were, that among seven turtle-doves fed on cane-sugar and bread with water (coagulated albumen having been added, in two cases, after the sixth day), not one possessed, at the time of death, the average quantity of fat; their general average of fat was nearly 60 per cent. less than that found in healthy individuals, i. e., the average in health was found to be 15.8 per cent., and in those fed on sugar only 6.3. Yet the fecal evacuations had been in most cases moderate. But the sugar, though it did not increase the fat, served towards maintaining the temperature of the body and the average production of carbonic acid. The quantity produced by these birds, on ordinary diet, was 13.2 grains per hour; during seven days' starvation, it was 6.65 grains per hour, and during three days' diet of sugar 11.08 grains. In turtle-doves fed for six days on butter, the quantity of fat found after death was scarcely more than in those who had died on the diet of sugar without albumen; and the quantity of carbonic acid produced by them was 9.08 grains per hour. And to these evidences of the transformation of saccharine into fatty substances, it may be added that butyric acid may be formed in the fermentation of sugar,[‡] and that M. Avequin[§] has noticed, that the quantity of that crystalline wax which forms on the exterior of the sugar cane (and which he has named cerosia), always bears an inverse proportion to the quantity of sugar within the cane.

* Gazette Médicale, 21 Oct. 1843, from the Académie des Sciences, séance du 16 Oct.

† Annales de Chimie et de Physique, Juin, and Annales des Sciences Naturelles, Juillet, 1844.

‡ Annalen der Chemie und Pharmacie, Oct. 1843.

§ In Mulder's Physiol. Heilkunde, p. 271, and Mr. Paget's Report on the Progress of Physiology.

MM. Bouehardat and Sandras fed some dogs for several days on sugar. After their death, sugar more or less modified was detected in every portion of the intestinal canal. In one part, it was found as ordinary sugar, in another, as "sucre interverti," and in another as lactic acid. The urine, blood, chyle, and bile of these dogs contained traces of "sucre interverti" and of lactic acid. In order that the sugar should thoroughly disappear in the blood, they conceive that it must be first changed into sugar of grapes and lactic acid in the intestinal canal; the ultimate products of the decomposition being water and carbonic acid.*

Enderlin[†] has carefully examined the contents of the various portions of the intestinal tube of the hare.

CASE OF MUSICAL BELLOW'S MURMUR IN THE HEART, WITH THE APPEARANCES ON DISSECTION.

(Recorded by Messrs. Sargint and De Meric.)

The following case, treated by Dr. Benson, and published with his permission, presented the very hopeless combination of pulmonary tubercles, hypertrophy, and valvular disease of the heart, Bright's disease of the kidneys, and anasarca with ascites. These were all accurately diagnosed during life, and nothing very uncommon was observed after death; but yet the case seems worthy of notice on account of the well-marked musical bellows murmur which accompanied the heart's action, and the slight organic change of the valves on which it appeared to depend:

Mary Hammond, ætat. 40, dark hair, blue eyes, a cook, of temperate habits; states that for the last three years she has been troubled with a very obstinate cough. The expectoration is muco-purulent, but never was bloody. Since her last confinement, about six months ago, she has lost much flesh, and has been troubled with "beating of the heart." Her legs have lately swelled, and she feels quite unable to attend to her duty as a servant.

Admitted April 1, 1845. Patient's countenance is pale and anxious; legs, thighs, and abdomen, anasarcaous, with some little

* Journal de Pharmacie et de Chimie, March, 1845.

† Liebig's Annalen, 1844.

ascites; chest sounds dull on percussion under right clavicle, and in the same region there is tubular respiration, bronchophony, and mucous rales; bronchitic rales are also heard over the entire thorax. The impulse of the heart is heaving, strong, and dull; both the systole and diastole, but especially the former, are accompanied with a musical bellows murmur; this is heard most distinctly at the edge of the sternum, where the cartilage of the fifth rib joins it. The note varies a little at different times; it is loudest when she leans forward, or is excited, and may be heard, though faintly, round by the nipple and to where the apex strikes. It is most plainly heard when she holds her breath, as it is a little marked by respiration, and resembles, at times, the sonorous rale of bronchitis. Bowels confined; pulse 100; catamenia have not appeared since her confinement; urine brownish, scanty, and coagulates by neat and nitric acid; dyspnoea distressing.

R. Ol. Ricini, ℥iv.

Spiritus terebinth., ℥ij.

Aq. menth. pip., ℥i.

Ft. haustus statim sumendus.

R. Naphthæ medic., ℥ij.

Aquæ puræ, ℥viij. M.

Sumat cochleare amplum 3tiis horis.

6th. Cough somewhat less; anasarca rather increasing.

R. Naphthæ medicinalis, ℥ij.

Infusi digitalis, ℥ij.

Mist. camphoræ, ℥vi. M.

Sumat unciam sextâ quâque horâ.

13th. Anasarca and ascites increasing; much dyspnoea; urine scanty, brownish, and coagulable; cough very troublesome; physical signs of heart and lung-disease not materially altered. The diseases were pronounced to be — *Tubercles in the top of the right lung; disease of the mitral valves; hypertrophy of the ventricles; and Bright's disease of the kidneys.*

Applicentur cucurbitulæ cruentæ lumbis et educatur sanguis ad ℥viij.

R. Decocti scoparii, ℥vi.

Infusi digitalis, ℥ij.

Spir. etheris nitrosi, ℥ij.

Naphthæ medicinalis, ℥i. M.

Ft. mistura, cujus sumat, ℥i. 4tis horis.

Legs to be rubbed with camphorated oil, as they are painfully tense, cold, and heavy.

May 5th. Various diuretics, and hydragogue purgatives, as gamboge, elaterium, &c., &c., were used without the effect of increasing the urine, or diminishing the anasarca, and her exhaustion and dyspnoea

were becoming insupportable. The anasarca occupied the arms, the legs, thighs, abdomen, loins, chest, and even the face in a slight degree.

In consultation with Dr. Hargrave, Dr. Benson resolved to puncture the cellular tissue of the abdomen and thighs in several places with a needle. Each puncture was quickly followed by a trickling of serum, which promised relief, and gave scarcely any pain.

R. Olei juniperi guttas sex. Spir. ether. nitr., ℥i.

Decoct. scoparii, ℥i. M.

Ft. haustus 4tâ quâque horâ repetandus.

26th. The punctures gave most decided relief — a constant flow of serum took place from them, and considerably unloaded the cellular tissue. At her own request the puncturing was frequently repeated, both with needles and the lancet — the dyspnoea diminished very much, and some trifling increase of urine succeeded. The last punctures, made at the outside of the knee, have, however, an erysipelatous blush about them, which is the more alarming, as erysipelas is at present prevailing a good deal in the city. The physical signs of disease in the heart and lungs remain nearly as before.

June 6th. The inflammation of the punctures spread daily, with excessive pain, and at length put on a gangrenous appearance. It is needless to follow the symptoms and treatment. She died this morning, worn out by dyspnoea, pain, and want of sleep. Delirium set in a few hours before death.

Post-mortem. — The *abdomen* contained a considerable quantity of straw-coloured serum. The *liver* was much enlarged, but of a natural colour and consistence.

The *kidneys* were enlarged; the cortical substance thickened and vascular; the fibrous capsule easily removed, and when peeled off leaving a mottled and slightly granular surface.

The *lungs* presented tubercles in all their stages; most advanced, however, at the top of the right, where cavities were found to exist.

The *heart* was much hypertrophied. The aortic valves slightly thickened, but capable of performing their functions perfectly. The mitral valves were much thickened at the edges, but no rough projection, no granulation, fungus, or prolongation of any kind. The thickening was of a firm fibro-cartilaginous nature, and had no calcareous deposit in it. The obstruc-

tion which it occasioned must have been very trifling, and the regurgitation which, no doubt, it permitted, must also have been very moderate.

The valves of the right side were healthy.

The foregoing case seems deserving of record for several reasons:—

1st. It was one of the many cases in which naphtha was tried. The medicine was variously combined to suit the circumstances of the patient, but was not found to relieve the dyspnoea, nor in any other way to benefit the pulmonary disease. All that Dr. Benson would say of it was, that it did no harm.

2d. The most decided relief to the dyspnoea was produced by unloading the cellular tissue of the abdomen and thighs of its serous fluid. This was done by puncturing the parts frequently with a needle or a lancet, by which means a constant weeping from the surface was kept up, and no inconvenience followed for many days; the patient was restored to comparative comfort from a state of great suffering. But, unfortunately, erysipelas was prevailing a good deal at the time, and some of the punctures, those about the knee, took on that unhealthy character, and hastened the fatal result.

3d. The kidneys presented a good specimen of Bright's disease in a very early stage, when the cortical substance is more thick and vascular than that of a sound kidney, and before the wasting, thinning, and *paling* process of the part commences.

4th. But the chief object of interest was the heart, as the musical sounds of that organ attracted general attention. Although the sound was most distinctly heard on the edge of the sternum, yet Dr. Benson considered the mitral valves diseased rather than the tricuspid; both because disease of the latter is so rare, and because he had met with similar cases, in which the sternum, like a sounding board, increased the intensity of the sound, so as to make it appear to be generated in the right cavities. But no one was prepared to find so little disease in the mitral valves, and they were sent to the College of Surgeons' Museum to show how very small an amount of organic change in them may give rise to musical sounds.

Dr. Benson suggested, that the altered condition of the blood (by Bright's disease), might have some effect in producing the sounds—as chlorosis gives rise to various noises in the arteries and veins. — *Dublin Medical Press.*

STATISTICS OF THE LOCK HOSPITAL OF EDINBURGH, FROM THE YEAR 1834 TO 1845.

By D. Skeen, M.D., Senior Acting Physician, and J. Benbow, Esq., House Surgeon.

This is a pamphlet of only nineteen pages, yet it contains more practical information than some 8vo. volumes which it has fallen to our lot to peruse. As a statistical report, it is extremely well drawn up, and it is calculated to serve as a model for hospital reports of a similar description. We here give a summary of some of the more important details contained in it. — *Dub. Med. Press.*

The number of patients admitted into the hospital during the period included in this report amounts to 2429. The admissions for each successive year were as follows:—1835–6, 207; 1836–7, 244; 1837–8, 275; 1838–9, 253; 1839–40, 310; 1840–1, 291; 1841–2, 320; 1842–3, 293; 1843–4, 236. Total, 2429.

From the foregoing it appears that the admissions into the hospital have been most frequent in the month of January; and next to that, in the months of August, September, October, and November.

The following table exhibits the number of each age:

| Age. | No. | Age. | No. | Age. | No. |
|---------|-----|------|-----|------|------|
| Infants | 9 | 19 | 404 | 34 | 12 |
| 9 | 4 | 20 | 271 | 36 | 11 |
| 10 | 1 | 21 | 161 | 38 | 3 |
| 11 | 3 | 22 | 127 | 40 | 9 |
| 12 | 1 | 23 | 111 | 42 | 1 |
| 13 | 3 | 24 | 76 | 44 | 3 |
| 14 | 17 | 25 | 58 | 53 | 1 |
| 15 | 57 | 26 | 69 | 55 | 2 |
| 16 | 178 | 28 | 56 | 58 | 1 |
| 17 | 324 | 30 | 37 | — | — |
| 18 | 406 | 32 | 13 | — | 2429 |

Of the patients above 30 years of age (only 56 in number), a majority were married, and nearly all of them laboured under the secondary symptoms of venereal disease. Eight patients were above the age of 40, and only four of these above 50.

It is, perhaps, worthy of remark, in reference to this table, that it affords evidence of the great mortality of prostitutes. It would appear from other records of the institution, that a very small proportion of the inmates return to a virtuous course of life, and as age or previous infection does not make them less susceptible of the dia-

case, it must be inferred that a great majority die at a very early age.

The diseases under which the inmates of the hospital laboured, may be conveniently referred to the four following heads, viz., gonorrhœa, condyloma, primary and secondary syphilis: a few cases will remain in each year, in which the patients were affected with warts and abscesses *alone*, and which cannot be comprised under any of these heads. The following statement will show the relative frequency of each of the above forms of venereal disease: Gonorrhœa, 520; condyloma, 400; primary syphilis, 1055; secondary syphilis, 365; warts and abscesses, 89. Total, 2429.

It thus appears that nearly one-half of the whole number of patients admitted into the hospital were affected with primary syphilis — the relative proportions per cent. were nearly as follows —

| | | | |
|---------------------|---|---|-----|
| Gonorrhœa | . | . | 22½ |
| Condyloma | . | . | 16½ |
| Primary syphilis | . | . | 43½ |
| Secondary syphilis | . | . | 15 |
| Abscesses and warts | . | . | 3½ |

The great frequency of primary syphilis in the hospital compared with the other forms of venereal disease, must be attributed to the severity of the symptoms and the rapidity of its progress. It cannot be doubted that many females labouring under gonorrhœa undertake their own cure, and that a still larger proportion, from the mildness of the symptoms, disregard the affection altogether, and leave it to pass into a chronic state not distinguishable from, if not identical with, leucorrhœa.

Lastly, this statement shows that the case of secondary syphilis are to those of the primary affection nearly as one to three.

The treatment of gonorrhœa was almost entirely local, consisting, in the few cases which presented inflammatory symptoms, of scarifications and warm water injections, and in the others in the use of stimulating injections, consisting of solutions of zinc, sulphate of copper, alum, acetate of lead, and decoction of oak-bark. In chronic cases, mostly of long standing, advantage was occasionally obtained from the introduction of bougies coated with citrine ointment; more marked benefit, however, in similar cases, was derived from plugging the vagina with tampons of lint saturated with some astringent lotion; in others, again, the introduction of the nitrate of silver, in substance, into the vagina or

uterus, was followed by immediate and decided amendment — so much so, indeed, that in two cases, one of them of two years duration, a complete cure was effected by a single introduction of the caustic. In each of these cases the discharge proceeded both from the uterus and vagina.

With regard to the efficacy of internal remedies, we have tried numerous experiments with cubebs and copaiba, and are satisfied that neither of them have any effect upon gonorrhœa in the female. Even in one case where the discharge proceeded from the urethra, the copaiba, contrary to the opinion of M. Ricord, did not appear to have any effect.

In chronic discharges from the uterus and vagina, apparently of a leucorrhœal character, we administered pills of sulphate of zinc in a great number of cases, in others we tried the ergot of rye, and in others the tincture of cantharides. From the two former we observed no marked advantage; the latter, however, we found very useful in a majority of instances. In obstinate cases, a cure was sometimes effected after the application of blisters to the sacrum; and, lastly, where the uterus presented much congestion, we found great use from scarifications of the cervix.

From our observations we are convinced that the features described in works on forensic medicine as affording a means of diagnosis between gonorrhœa and leucorrhœa, are extremely fallacious. Gonorrhœa, it is said, affects the lower part of the vagina only, while leucorrhœa proceeds from a higher source. This may be true in certain recent cases of gonorrhœa, the result of violence; but it is by no means true in the great majority of cases. In many instances which we have seen of the disease in its acute stage, the mucous membrane of the vagina was inflamed throughout its whole extent, and also that of the cervix uteri; while a discharge exactly similar to that secreted in the vagina was also seen issuing from the os uteri. And in chronic cases, on the other hand, so far from this statement being accurate, we believe that the discharge of gonorrhœa proceeds principally from the *upper* part of the vagina.

Lastly, we have repeatedly inoculated with the matter of gonorrhœa without in a single instance obtaining a positive result, our experiments in this respect being in accordance with those of M. Ricord and others.

In all cases of condyloma which we have observed, there was a remarkable hoarseness of the voice. In most of them the

tonsils, soft palate, back of the pharynx, some of the tongue, inside of the cheeks, or angles of the mouth, presented *white elevated patches* at some period of the disease.

The character of the eruption which accompanies or follows this disease coincides with the descriptions given of *psoriasis venerea*; consisting at first of brown or copper-coloured stains of small size, slightly elevated, and afterwards becoming scaly.

This eruption we consider a very common accompaniment or sequel of the disease, and more frequently the result of condyloma than of syphilis. We have not seen any other form of cutaneous eruption attendant upon condyloma.

The treatment of this affection consisted principally in friction with the sulphate of copper, and the application of a lotion containing this salt in solution, in proportions varying from four to sixteen grains to the ounce of water. Nitrate of silver was occasionally, but rarely, employed; it seemed to act less beneficially.

The treatment of primary syphilis in the hospital, with the exception of those few cases in which mercury was administered, has been simple, antiphlogistic, and local, consisting, latterly, almost entirely in the frequent application of nitrate of silver during the ulcerative stage of the disease, and afterwards in warm-water dressings or in stimulating lotions as the case might require. In phagedenic ulceration we have found the nitric and muriatic acids very useful caustics. In other cases of this kind we have derived great advantage from the application of leeches to the sore.

In the constitutional treatment of syphilis we have been particularly struck with the marked benefits resulting from severe antiphlogistic means in certain cases. General blood-letting and the use of antimony were in many instances followed by the most rapid cures. In sloughing and phagedenic sores, on the other hand, equally marked advantage resulted from the administration of tonics and generous diet.

Of the whole number of patients, 380 had had children, or were pregnant at the time of their residence in the hospital. Of these 73 described themselves as married. On the supposition that the whole of these were actually married, the proportion of prostitutes, who had been pregnant, was about 12½ per cent. These statements refer almost exclusively to patients who have carried their children the full term of utero-gestation. From careful inquiries,

we have satisfied ourselves that a large proportion of prostitutes miscarry at an early period of pregnancy.

These miscarriages take place in a great number of cases about the sixth week after conception, and in most instances the females themselves are ignorant of the fact.

We have directed especial attention to the colour of the vagina, as affording evidence of the existence of pregnancy, and while we must admit that in a majority of cases the characteristic lividity is present and well marked in pregnant females, we have on the one hand seen pregnant females in whom it was scarcely apparent, and others not pregnant in whom the vagina presented the colour indicative of this state. The latter were mostly cases of chronic discharges from the vagina.

Lastly, of the 2429 cases included in the foregoing statistical tables, the deaths in the hospital were 7. Of these, 3 died from the effects of the venereal disease, aggravated by the use of mercury; one died from jaundice; one from apoplexy; one from pneumonia; and one from fever.—*Ibid.*

DISEASES OF WOMEN UNCONNECTED WITH PREGNANCY AND THE PUERPERAL STATE.*

1. *Amenorrhœa.* The disorders connected with the important function of menstruation never fail to command a considerable share of attention. The different aspects which deficiency of this excretion may assume, are well described by Mr. Bell, in a paper published in a recent number of the *Edinburgh Medical and Surgical Journal*.† In reference to the *modus operandi* of emmenagogue medicines, this author observes that much less assistance had been derived from the more correct physiological notions respecting the function of menstruation which have been established during the last few years, than might reasonably have been expected; in fact, that the theory of the periodic maturation and expulsion of ova so far from rendering the action of medicines more intelligible, has tended rather to the greater obscurity of the subject. We cannot, however, admit that the explanation of

* Ranking's Half Yearly Abstract.

† April, 1845, p. 341.

the action of these medicines as derived from their operation upon the blood, is at all less applicable under our improved physiological knowledge, than it had previously been; for it is just as easy to conceive that a due constitution of that fluid is necessary to the perfect maturation of an ovum, as to the healthy formation of the bile. We do not mean to assert that there is any close resemblance between the production of ova and the secretion of bile, but merely that as both constitute the essential function of the ovary and the liver respectively, a healthy state of the blood is as necessary in the one case as in the other, and the action of medicines, therefore, equally intelligible.

The comparative power of the different preparations of iron in restoring the blood in chlorotic patients to its normal state, is noticed by MM. Raciborski and Selade: by the latter in an elaborate paper on the therapeutic value of the ferruginous preparations in general. M. Raciborski agrees with MM. Quevenne and Miquelard in giving the preference to metallic iron in an extremely minute state of division, the mode of obtaining which will be found in a former part of this work. (100.) The memoir of M. Selade* is very complete of its kind, and enters minutely into the value of each individual preparation of iron. The best of these, according to this author, are the proto-muriate or hydrochlorate, the carbonate and the lactate; into which latter it is believed by Gelis and Couté, that the other preparations are converted by the action of the gastric juice. This opinion, however, is denied by M. Selade, who leans to the assumption that the metal enters into combination with the free muriatic acid of the stomach. The question is one of too purely a chemical nature for this report, and we therefore shall pass on to something of a more practical nature. We may, however, before dismissing the subject, briefly allude to the author's theory of the mode in which the iron combines with the blood. When, according to his theory, a preparation of iron becomes absorbed, it is quickly decomposed, and its ferruginous portion combines with the globules which have lost their hæmatosein, and which in this condition are found in company with great numbers of colourless globules. If it has already been oxydized, it soon becomes converted into the carbonate of the protoxide by uniting with the carbonic acid of the venous blood. When these globules arrive at the lungs, they absorb oxygen from the atmosphere, and the

iron passes at once to the state of protoxide, the carbonic acid being given off.

Although chlorosis and amenorrhœa are not necessarily connected, we cannot do better than here allude to the description by M. Ricord,* of a form of Chlorosis depending upon syphilitic contamination. It has been ascertained that the action of the syphilitic poison is principally exercised upon the globules, in the number of which it causes a considerable diminution, for which reason ferruginous preparations are in general in these cases of great efficacy. They are not, however, as has been observed by M. Ricord, sufficient by themselves as in simple chlorosis, but require at the same time a special antisyphilitic medication. M. Ricord, therefore, employs mercurials as well as iron, but we remark that no combination is more likely to be of use in these cases than a combination of the latter metal with iodine.

2. *Menorrhagia.* In the treatment of profuse menstruation, the oxide of silver is very highly spoken of by Sir James Eyre in a useful little work lately published.† According to the author's experience, it is superior to the secale cornutum, gallic acid, and indeed all other remedies. The dose is half a grain three times a day gradually increased to one or two grains. A new, and according to M. Givestet,‡ very active medicine in the same disease is the expressed juice of the *urtica urens*. Our own experience in the treatment of menorrhagia is greatly in favour of the ergot of rye, which we give in the dose of 10 grains of the powder with 6 grains of the pulv. ipecac. c. We have seldom met with a case unconnected with organic disease of the uterus which has not yielded speedily to this combination; and we may state, moreover, that having been in the habit of giving it for five or six years, we have never met with any symptom whatever to lead us to apprehend the least inconvenience from its employment.

We may likewise observe that the active principle of the secale called ergotin has been productive of the greatest benefit in the uterine hemorrhages depending upon malignant disease. Dr. Ebers,§ who has had extensive experience of the medicine, recommends the following formula when the ergotin cannot be procured. Bruised ergot 100 grammes, boiling water 500 grammes, macerate for three hours and strain; then add 5 grammes of fresh lemon juice.

3. *Vicarious menstruation.* Three cases of this rare, though sufficiently familiar occurrence, have been lately recorded. The first|| is that of a female who having received a lace-

* Journal des Connaissances Médicales, Nov. 1844.

† Practical Remarks on some Exhausting Diseases. London, 12mo. 1845.

‡ Encyclographie Médicale de M. Lartigue. Oct. 1844.

§ Casper's Wochenschrift, No. 28, 1844.

|| Neue Zeitschrift für Geburtshunde.

* Archives de la Médecine Belge, Fev. 1845.

rated wound near the elbow, had from it a supplementary periodic discharge for several months in succession. Upon her becoming pregnant the wound partially cicatrized, but the scab fell off subsequently to her delivery, again giving issue to a periodic discharge of blood, which continued until the menstrual function became thoroughly re-established. The second instance is reported in the *New York Journal of Medicine*. The third was brought before the Société d'Emulation of Paris by M. Forget.* The supplementary discharge in this case was from the conjunctiva, auditory passages, and from certain portions of the integuments.

4. *Diseases of the ovary — Acute Ovaritis.* The occurrence of acute inflammation of the ovaries, independently of the puerperal state, is generally thought to be unfrequent, so much so that it appears to be treated of in systematic works on the Diseases of Females, rather because its omission would leave a hiatus in the nosological code than from any distinct conception in the minds of the authors of its existence as a separate disease. There is little doubt, however, that these organs are liable to attacks of inflammation in the virgin state; and it is probable that, if the diagnosis could be rendered less complicated, it would be found to be a commoner cause of many of the symptoms attendant upon dysmenorrhœa, and other sexual affections in females than is generally suspected. The subject has lately been illustrated in an elaborate memoir by M. Chereau,† which has since been published in a separate form. The author acknowledges three conditions under which acute ovaritis may develop itself; first, and by far the most frequent, the puerperal state; secondly, immediately before and after the menstrual period; and thirdly, from extension of disease from neighbouring parts, as the rectum, uterus, &c. The disease may terminate in resolution, induration, softening, suppuration, and gangrene, the former being, under appropriate treatment, the most usual event. The inflamed ovary may occasionally be perceived by palpitation of the abdominal walls, but more frequently, unless greatly enlarged, it cannot be so recognised. A surer diagnosis may be formed either by vaginal examination, or by an examination per rectum, which latter is the most certain, as we are able by that means to make direct pressure upon the diseased organ. M. Chereau in the enumeration of the symptoms omits one which we have always found to be present in well-marked cases of the disease, viz., pain upon the passage of hardened feces. We have several times found patients labouring under dysmenorrhœa and sudden suppression of the menses, in which cases we believe that the ovaries are often inflamed, who have complained of a great aggravation of their sufferings whenever

the bowels have been allowed to become costive. The treatment recommended by the author does not need particular mention. (102.)

5. *Ovarian Tumour.* The subject of ovarian diseases of a chronic character have lately been invested with a peculiar interest, from the attempt that has been made to revive the operation of gastrotomy for their removal. We do not regret that we have no case to record of this operation which has occurred during the period embraced by our report. The merits of the operation itself have, however, met with a considerable attention at the hands of several persons well qualified to give an opinion, among whom we may mention Mr. Liston, Dr. Ashwell, &c., and the result has been its unequivocal condemnation by the majority, as unjustifiable in any point of view in which it can be considered. The remarks of Mr. Liston may be found in the *Lancet*, Feb. 8, 1845. Dr. Ashwell, after taking a general review of the progress of ovarian tumours, thus expresses himself: "It does not appear that statistics more favourable even than we have a right to expect, will materially change the aspect of the circumstances under which the operation is to be performed. . . . What would be thought of the feasibility of any other operation involving life in imminent hazard, if it were discovered that out of sixty-seven cases, it was from absolute error in diagnosis incapable of completion in eighteen; that of the remaining forty-nine, where the extirpation was effected, sixteen died, and two were not cured; so that out of the whole number the operation failed in thirty-six, and succeeded in thirty-one, less than one half." (p. 647.)

The editor of the *London and Edinburgh Monthly Journal* does not give a more promising view of the operation than the writer above quoted; indeed, as given by the former, the statistics of the operation place it possibly still lower in the scale of feasibility. In 89 cases collected in a tabular form in the above-named Journal, it appears that 55 recovered and 34 perished from the immediate consequences of the operation. But it appears also that in 9 cases either no tumour was found when the abdomen was laid open, or that it was unconnected with the ovary — cases which place the certainty of diagnosis in a very unfavourable light — and moreover in 14 others the operation could not be completed. Of these 23 patients, 13 recovered and 10 died; so that the number of instances in which the intentions of the operator were fully carried out is reduced to 65, of which number 25 died. This, it certainly appears to us, is a mortality which, although it should not deter from operating in a disease by which life must otherwise inevitably be speedily sacrificed, should make us pause before we interfere in a malady which may be endured in many cases throughout

* Bulletin des Académies, Oct. 1844, p. 12.

† Mémoire pour servir à l'étude des Maladies des Ovaries. Paris, 1845.

* Practical Treatise on the Diseases peculiar to Women. London, 1844.

long life without other inconvenience than that arising from the bulk of the tumour.

The last writer we shall mention by whom the operation of ovariectomy has been considered, is M. Cazeau, in a memoir on the subject presented to the Société d'Emulation of Paris, at the meeting of the 4th Dec. 1844. The opinions expressed by this author correspond in every respect with those above mentioned.*

Turning from the disheartening evidence with respect to operative measures for the cure of ovarian tumours, we refer with pleasure to a case reported by Mr. Brown,† in which a perfect recovery followed the use of compression combined with the exhibition of mercurials and diuretics. This case, as Mr. Brown very justly observes, should encourage us to greater energy in the medical treatment of these diseases.

A case related by Mr. Hardy in the same journal, in which a large ovarian tumour, having twice impeded delivery, ultimately caused death by inducing strangulation of the intestine, and another by Dr. Lambrecht, in which the contents of an ovarian cyst were on two separate occasions discharged through the umbilicus.‡

6. *Diseases of the Uterus. Inflammation of the os and cervix:* — Dr. Bennett§ has drawn our attention to this subject in an admirable series of papers published in the *Lancet*. He establishes a distinction between inflammation of the cervix as it occurs in the virgin, and the same disease in women who have been and are exposed to sexual intercourse. In the latter individuals, he believes that a confirmed leucorrhœal discharge rarely exists without the presence of inflammatory engorgement of the uterine neck. A considerable difference is also found, according to the author, in the readiness with which the deeper structures become involved, between those women who have and those who have not submitted to sexual intercourse. In the latter, the deep uterine tissue is seldom involved, and the womb retains its natural resistance to the finger upon examination.

* It is but right to state, that since the above was written, the operation of ovariectomy has been strenuously supported by Mr. Atlee (*Amer. Journal of the Med. Sciences*, April, 1845), in some remarks appended to an account of a successful case of abdominal section for the extirpation of a fibrous tumour of the uterus. (106.) The statistics of the operations, as stated by him, are the most extensive of any as yet on record, amounting to 101 cases, in which 38 died, or 1 in 2½. The causes of death in the fatal cases are from hemorrhage in 3, peritonitis in 8, exhaustion in 2, inflammation of large intestines in 1, gangrene 2, peritonitis and gangrene 1, causes not stated 16, total 38.

† *Lancet*, April 5, 1842.

‡ *Medicinishe Zeitung*, No. 30, 1844.

§ *Lancet*, May 3 and 10, 1845.

On the other hand, in women who have conceived, the diseased action readily extends to the central textures of the cervix, inducing induration of the part, together with an enlarged and fissured state of the os uteri. Syphilitic ulcerations of the os and cervix uteri are exceedingly rare, as is observed both by Dr. Bennett and also by Dr. Heming,* but other ulcerations, both in women in whom no venereal affection can be suspected, and in those who are labouring under the indubitable secondary effects of the disease, are as common. These ulcerations are in nearly all cases, according to Dr. Bennett, simply inflammatory.

The treatment of the non-ulcerated inflammation of the neck of the womb, as laid down by Dr. Bennett, is exceedingly simple, and consists chiefly of emollient or astringent injections. With reference to this expedient, he gives us a practical hint which is worthy of remembrance, to the effect that the injection should be used by the patient lying on her back, with the pelvis somewhat raised; by which means the injected fluid is more readily applied to the diseased parts. It very commonly happens, when the injection is used in the sitting posture, that it never reaches the upper part of the vagina at all. When ulceration has taken place, cicatrization, either by the nitrate of silver or by the acid nitrate of mercury, speedily effects a cure. The treatment of ulceration with induration of the cervix, is not so simple. It is thus stated by Dr. Bennett:—"In these cases, cauterization may in general be resorted to at once, but if speedy benefit does not ensue, the repeated application of leeches to the uterus itself is to be advised." Of the latter proceeding he speaks in the highest terms, as a means of all others the most potent in removing the engorged and indurated condition of the parts. If this plan does not succeed, we may then try what can be done by deep cauterization with the Vienna paste, or by inunction with iodine ointment. For rules, by which the application of the caustic is to be regulated, we refer the reader to the original paper.

The subject of ulceration of the cervix uteri is likewise treated of in the *Annales de Thérapeutique*, Avril, 1845, (103.) and by M. Péraire, in the *Gazette Médicale*, No. 7. This author agrees with Dr. Bennett in the great serviceability of cauterization in the complaint, and writes for the purpose of recommending the performance of the operation "coup sur coup," that is, at short intervals. The duration of this mode of treatment, necessary for the cure of the different forms of ulceration, is thus stated; in simple ulceration, 16 or 17 days; in the granular ulcer, from 25 to 40 days; in ulcerations combined with induration of the cervix, from 4 to 5 months.

The profession is much indebted to Dr. Bennett for the perspicuity with which he has treated the subject of uterine ulcerations; a department of pathology too much neglected in

* *Lancet*, Nov. 9, 1844.

this country. If his remarks, which we are glad to see are about to appear in a separate form, induce the British practitioner to inquire more deeply than he is accustomed to do into the causes of uterine symptoms in the unimpregnated state, and to treat them less by guess work, he will be the means of conferring no slight benefit upon the community; for we are convinced that these undiscovered, because unlooked for, affections of the female reproductive organs, are the cause of more moral and physical disturbance, than those to which any other part of the human frame is subject.

7. *Amputation of the cervix uteri* has lately been performed by Dr. Montgomery,* for cauliflower excrescence. The operation was performed by ligature, which Dr. Montgomery considers preferable in all cases to the knife, as even where it fails to effect a cure, it is productive of much advantage, by moderating those wasting discharges which mainly contribute to the fatal termination of the disease.

8. *Extirpation of the uterus.* Two cases in which the entire uterus has been successfully removed by ligature, for inversion, are related by Dr. McClinton,† and the operation by incision has been unsuccessfully performed by M. Mollet,‡ for supposed inversion. In the latter case, however, the examination proved that the diagnosis had been erroneous, as the supposed inverted uterus was nothing more than an enormous polypus, which had dragged the womb out of its situation. Some excellent remarks on the diagnosis of inverted uterus and polypus, will be found appended to the notice of the memoir of M. Mollet, in the *Edinburgh Monthly Journal*, for which we refer to the Abstract. (104.) It is generally admitted, that in ordinary cases, the distinction between these two affections can be made out with tolerable certainty; the possibility of encircling the neck of the tumour in the one case, and its uninterrupted continuation with the vaginal walls in the other, being sufficient to enable us to avoid error; but, as the editor of the journal from which the notice of this memoir is taken justly observes, when the polypus springs from the edge of the os uteri, this valuable sign is rendered useless; for we cannot in this case trace the peduncle of the polypus encircled by the os uteri, and even if we are able to feel a portion of it, it is so altered in form and situation, as with difficulty to be recognized. The diagnosis in these cases is, as the Editor states, rendered more easy by the introduction of the uterine sound, upon the plan proposed by Dr. Simpson, by which means we can ascertain the presence of the uterine cavity, and consequently form an idea of its shape and situation. M. Lisfranc recommends, in doubtful cases, the introduction of a curved catheter into the bladder, with the concavity downwards; if the case is one of inversion, the point of the instrument

will be readily felt by the finger passed into the vagina. The same surgeon, however, places more confidence in an examination per anum, than in any other. If the uterus be inverted, a void will be perceived in its usual situation; if the vaginal tumour be a polypus, on the contrary, the perception of a second tumour will announce that the uterus occupies its usual situation.

9. *Prolapsus uteri.* Professor Chaumet,* of Bordeaux, has suggested a new method of cure in displacements of the womb, which appears to be, for the most part, a modification only of that formerly recommended by Marshall Hall. This, as may be remembered, consists in removing a portion of the vaginal mucous membrane, and uniting the edges of the incision by suture. M. Chaumet likewise makes this proceeding the initiatory part of his operation, but in addition excises a portion of the whole of the cervix uteri. There is nothing in this operation which can render it in any way preferable to that upon which it is suggested as an improvement; on the contrary, the great success by which the latter has been followed in the hands of Velpeau, Dieffenbach, Fricke, and other continental surgeons, as well as in this country under Drs. Hall, Heming, and Ireland, would tend, in our opinion, to stamp the modification proposed by M. Chaumet as a proceeding of the most unjustifiable severity.

10. *Diseases of the vagina:—Vesico-vaginal fistula.* This afflicting accident has lately been made the subject of a lengthened discussion at the Académie des Sciences Médicales (Seances, Fév. et Mai, 1845) on the presentation of a memoir by M. Berard, upon an operation for its removal, which was originally recommended by Vidal de Cassis. This operation, to which the term "*infibulation*" has been applied, consists in the obliteration of the vagina, by dissecting off its mucous membrane, and bringing its walls into opposition by sutures. The objections to this extraordinary operation are sufficiently obvious; and we need only mention the retention of the menses which must ensue, to say nothing of depriving the female of the attributes of her sex, to convince our readers that it would not obtain a moment's consideration among British surgeons. Strange to say, however, the operation was defended by M. Velpeau. MM. Dubois and Moreau more justly pronounced the proceeding as irrational.

11. A case of *laceration of the vagina* during labour, with the escape of the fœtus into the abdominal cavity, is reported by Mr. Oliver,† and a second by Mr. Graus.‡ The latter is chiefly remarkable for the mode of treatment which it was thought proper to adopt in order

* Dublin Journal, Jan. 1845.

† Dublin Journal, March, 1845.

‡ Edinburgh Monthly Journal, April, 1845.

* Bulletin de l'Académie Royale de Médecine, reported in Medical Times, April 12th, 1845.

† Lancet, November 1844.

‡ Bulletin de l'Académie Royale de Médecine Belge, 1844-1845, No. 1, p. 3.

to combat the consequences of the peritonitis which ensued, and which consisted in injecting the peritoneal sac through the rent in the vagina, and withdrawing the purulent accumulation which had taken place by means of a syringe and œsophagus tube. The patient survived this extraordinary proceeding, and moreover sustained the additional operation of an incision in the lumbar region, for the purpose of liberating the purulent matter which had accumulated in the neighbourhood of the kidneys. In the discussion which ensued upon the relation of this case, it was reasonably doubted whether the vast collection of pus was not contained in the pelvic and lumbar fascia, rather than within the cavity of the serous membrane. (115.)

EPILEPSY.

M. Leuret* having always under his care, 100 or more male epileptics, has given the results of his researches on the causes, symptoms, course, and termination of epilepsy. Among predisposing causes, his tables show that adolescence must be ranked, and as young children are often carried off by early attacks, and few admitted into hospital, he considers childhood also a predisposing cause. Hereditary predisposition could be traced in 7 only of 106 cases. In reference to the real or presumed causes, of the 106, 39 could not assign even a probable cause, but of the remainder 35 assigned fear; 12 onanism; 6 drunkenness; 3 anger; and 2 falls. M. Leuret thinks the influence of the depressing passion of fear cannot be questioned. Seven cases are detailed in illustration, and great stress laid on the danger of exposing children to the influence of fear, as of all causes of epilepsy this he thinks the best established. In 82 of the 106, the attacks occurred at regular periods, and then were rarely single, but recurred frequently for twelve or twenty-four hours. The latter cases are often quickly fatal. In reference to the influence of season, the tables indicate that cold is injurious, and heat favourable. The relation of the moon's changes to 70 cases watched through the whole year, show that this luminary exerts no influence whatever on the course of epilepsy. The electric state of the atmosphere is not without influence; the attacks being more frequent in stormy weather. Intemperance and onanism are frequent causes of the return of an attack. Those in whom the seizures have observed

* Archives Gen. de Méd. 1843, p. 32. Recherches sur l'Épilepsie, par M. Leuret, de Bicêtre.

regular periods, suffer in various ways if at the regular time they have not an attack.

A case is related by Dr. Parish,* in which an epileptic paroxysm immediately succeeded to a blow on the head. After a lapse of eight months the disease returned, the attacks became frequent, and were immediately preceded by severe shooting pains over the seat of the original injury, though no pain was complained of at other times. This spot was tender, and firm pressure excited severe pain and general nervous agitation. An incision was made over the tender portion of the scalp, an issue established and kept up for seven weeks, when the soreness had entirely disappeared. From this time the patient had no return of the disease. Dr. William Heise,† of the Connaught Lunatic Asylum, states, that an epileptic lunatic who had received a severe wound of the head, with fracture of the skull, was from that time cured of his epilepsy and restored to reason.

In *epilepsy and epileptical mania*, Dr. Sharkey‡ thinks there is a particular tolerance of digitalis, which acts as a pure sedative; the characteristic effects on the circulation being manifested in the course of twenty-four or forty-eight hours. He gives the tincture in doses of from ʒij. to ʒss., and has detailed two cases of mania associated with epilepsy, and one of maniacal excitement in which marked benefit followed large doses of this medicine. In another case of epilepsy, great tolerance of the remedy was manifested, and relief obtained, with sound sleep and subsidence of the excitement (In a case in which, on the periodic return of epileptic attacks, the patient is scarcely free from the paroxysms for twenty-four hours, the Reporter has tried the effects of digitalis in doses of 40 min. every three or four hours, on three occasions, with, apparently, considerable benefit.) Dr. Baretti§ has detailed four cases of epilepsy successfully treated by the valerianate of zinc. Dr. Debreux|| has found the extract of belladonna by far the most successful remedy when there are no symptoms of cerebral congestion.

* Philadelphia Examiner, vol. vi., No. 2.

† Dublin Medical Press, Sept. 6, 1843.

‡ Medical Gazette, vol. i., 1843-4, p. 305, and vol. ii., p. 340.

§ Bulletino delle Scienze Mediche, Feb. and March, 1844, p. 121.

|| Thérapeutique appliquée, &c., par P. J. C. Debreque, 2de Ed. 1844.

When the paroxysms occur at long intervals, the belladonna is administered for a week or two before the expected invasion, and if preceded by a distinct aura, a strong dose of ammonia is recommended, as serving to ward off the paroxysm. — *Brit. and For. Med. Rev.*

DELIRIUM TREMENS.

The following remarkable case of delirium tremens, is given by Mr. S. Flood, in which, after trying opium fully, with tartar emetic, digitalis, &c., without effect, belladonna was employed in the following way. A large blister having been applied between the scapulae, the cuticle was stripped off, three inches long and two wide, and a plaster of pure extract of belladonna applied to the denuded surface. The man was, at the time, in a state of furious delirium, with contracted pupils, pulse 110, weak, and very irritable; and had not slept for 360 hours. So acute was the pain produced by the plaster, that he was instantly subdued; and entreated its immediate removal. In three minutes he ceased to complain; in five minutes there were slight twitchings of the muscles of the face and arms, his utterance became indistinct, he kept up a stupified laugh like a man much intoxicated; the pupils began rapidly to dilate, and in seven minutes were open to their fullest extent. He now became very drowsy and begged to lie down; the belladonna therefore, was sponged off, simple ointment applied, and he then fell back on his pillow, and in nine minutes from the first application was in a profound sleep, which lasted for seven hours. During the sleep, which was free from stertor, the pulse fluctuated remarkably. At the commencement it was 110, small and irritable; in five minutes it rose to 140; and in twenty minutes to 160; then gradually fell, till at the end of six hours, it had sunk to 108, and was full and soft. At the end of seven hours he awoke quite quiet, but after staring about him in stupified astonishment, soon relapsed into his former state of wildness. Opiates were now tried again in large doses, but without effect, and as he was apparently sinking from prolonged excitement, belladonna was applied, in the same way, a second time, two days after the first application. The same chain of phenomena followed, and

* *Lancet*, vol. ix., 1842-3, p. 12. Vide also *Ibid.* p. 797, for further remarks on the action of Belladonna.

sound sleep was induced, which continued for nine hours and a half. On the following day, belladonna was a third time applied, but to the same surface; from this time he gradually improved. Dr. Fosgate* recommends the union of ammonia with opium, not only as aiding to sustain the powers of the system, but also as modifying the influence of opium, diminishing its poisonous and increasing its therapeutic action. — *Ibid.*

TIC DOULOUREUX.

Dr. Hunt's† treatise contains much practical information on the varieties and treatment of tic douloureux and other neuralgic disorders, the result of considerable observation of those affections in the warm and humid climate of the south of Devon. He arranges the various forms of tic douloureux according to the causes from which it springs: 1, arising from the neuralgic habit; 2, from dyspepsia; 3, from dyspepsia complicated with congestion of the liver and other viscera; 4, from anæmia; 5, morbid action in the spine; 6, disorder of the uterus; 7, disease of the brain; 8, local mechanical causes; 9, malaria, recession of eruptions, and other causes. His treatment is directed, in the first instance, to the removal of that morbid condition which appears to stand in the relation of an exciting cause, and of course varies in each case. He proposes no new mode of treatment, but points out the indications, and gives excellent rules for the administration of well-known remedies, more especially of arsenic, in which he places great confidence as a tonic. He finds it of most efficacy in those of a lax fibre, languid circulation, cold and moist skin, and whose urine is pale and plentiful.

M. Banneix‡ lays stress on the existence of one or more spots, painful on pressure, along the course of the affected

* *American Journal of Medical Sciences*, Jan. 1844.

† *The Nature and Treatment of Tic Douloureux, &c.*, by H. Hunt, M. D.; London, 1844.

‡ *Bulletin Gén. de Thérap.*, t. xxv., p. 17.

nerve, as important to the diagnosis of neuralgia, and after reviewing the principal modes of treatment, concludes by recommending repeated blisters over the different painful spots, as ascertained by pressure, and as an adjuvant, the application of the salts of morphia to the denuded surface. He thinks the connexion between neuralgia and morbid states of the digestive organs has been overrated. Dr. Hutchinson recommends the internal and external use of belladonna;* and Dr. Danderfield has related two cases confirmatory of Dr. H.'s views.†

Dr. Roelants of Rotterdam,‡ for six years past has obtained the most successful results from *nux vomica* in the treatment of prosopalgia; 29 cases are detailed, both recent and confirmed, of whom 25 were cured, 3 were under treatment, and 1 was but partially treated. The curative action is speedily manifested, and the duration of the affection appears to have no influence in this respect, very chronic cases being much relieved in eight days. In one case of seven years' standing, in a man æt. 61, two-thirds of a grain of powdered *nux vomica* were given every two hours, followed by great relief in eight days, and a complete cure after two months' treatment. For five months longer, (i. e., after the disappearance of all pain,) he continued to take three grains per diem to prevent a relapse, which after three years had not occurred. The importance of continuing the treatment for some time is particularly insisted on. This man had taken iron largely without effect. M. Rougier of Lyons,§ employs morphia in the treatment of neuralgia, by the endermic method, and then exhibits strychnine internally to remove the partial paralysis that sometimes ensues, and to confirm the cure. If the strychnine reproduce or increase the pain, it is a sign that the neuralgia is not effectively cured, and vice versa.

Sciatica.—Dr. Fioravante|| was led to employ blisters to the heels in the treatment of sciatica, from hearing of several empirical cures performed by a woman who applied irritating substances (*ranunculus sceleratus*), to the same parts. The epi-

dermis was softened, and then removed till the blisters would produce their ordinary effects. The suppuration thus established was kept up for some time in chronic cases. Twelve cases are mentioned which were speedily cured by this means. [A memoir was published about ten years ago by Dr. Petri of Aguilà, a town of the Abruzzi, to make known a method of treating sciatica by the application of the actual cautery between the little toe and the next one of the affected limb. Quadri of Naples has obtained great success, by adopting the same treatment, and states that a Capuchin monk, affected with sciatica, used to carry about with him a cauterising iron.]—*Ibid.*

GOUT AND RHEUMATISM. — THEIR PATHOLOGY AND TREATMENT.

Dr. Bence Jones's treatise,* in which he endeavours to apply the physiological and chemical doctrines of Liebig to the elucidation of the pathology and therapeutics of gravel, calculus, and gout, has already been noticed in this Journal. Dr. Todd,† though admitting the humoral origin of gout and rheumatism, denies that lithic acid is the *materies morbi* in gout, which must, he thinks, be looked for as a compound derived from the unhealthy action of the stomach and duodenum, and which being taken into the blood, unites with elements of bile that have accumulated there, through defective secretory action of the liver. The copious deposits of lithic acid often observed in the urine for weeks or months without the occurrence of gout, he thinks sufficiently prove that lithic acid cannot be the *materies morbi*, and in like manner he infers, from the non-existence of lithic acid in excess, in the urine in certain cases of gout, "that the morbid element of the disease may be present independently of lithic acid;" and he particularly insists that low, depressed states of the system are favourable to the development of the gouty paroxysm. Rheumatism he believes

* On Gravel, Calculus, &c., by H. Bence Jones, M. B.; Lond. 1842.

† Croonian Lectures, by R. B. Todd, M. D., 8vo. 1843.

* Lancet, vol. i., 1843-4.

† Ibid. Oct. 7, 1843.

‡ Arch. Gén. de Méd., Sept. 1843; from Alg. Konst. Letterbode, No. 10, 1843.

§ Gaz. Méd. de Paris, July 8, 1843; from Journal de Méd. de Lyons.

|| Anali Universali di Medicina, Nov. 1843.

to consist in the presence of the same morbid element (lactic acid) in the blood, and calls attention to the important fact that the rheumatic diathesis may exist without presenting the usual phenomena of rheumatism, and that in this condition the heart may become seriously affected. The cardiac inflammation may in fact be primary, and when co-existing with the articular affection, is not usually to be viewed as the result of metastasis. He devotes a chapter to the connexion between rheumatism and uterine derangement, and adduces important reasons for believing that the accumulation of rheumatic matter in the blood may be the result of defective uterine action.

M. Briquet having employed with advantage sulphate of quinine in the treatment of typhoid fever, has had recourse to it in acute rheumatism. In his memoir, read to the French Academy,* he has detailed 23 cases treated in the following heroic manner: On the first day, 4, 5, or 6 grammes (3j to 3iiss.) of the sulph. quinqué (according to the age, &c. of the patient) were given, suspended in mucilage, in divided doses in the course of twelve hours. The same doses were repeated on the second and third days, when the symptoms had usually abated, and the doses were gradually diminished by grs. xx. per diem. The average duration of the pain and swelling of the joints was from three to five days. In more than one-third there was cardiac complication, recent or chronic. In all but four there was a marked abatement of the symptoms in twenty-four hours. The date of the affection did not influence the cure. Relapses occurred in two only. M. Devergie, in testing Briquet's statements† began with smaller doses, and gradually increased them, and made trial of the same remedy in chronic cases. He confirms Briquet's views, except that in acute cases he would give smaller doses than in the chronic. Other examples of the efficacy of Briquet's plan may be found scattered through the French journals, and Signor Mascheroni treated 40 cases in the Lodi hospital‡ with the best results, two or three only presenting any cardiac affec-

tion. The general result, however, of the investigations to which Briquet's memoir has led, is decidedly opposed to both the safety and utility of his plan. Several fatal cases have occurred in the French hospitals,* from these heroic doses. The conflicting opinions in reference to the toxic effects of large doses of quinine induced M. Melier to investigate the whole subject afresh, and Messrs. Andral, Beguin, &c., have reported on the memoir presented by Melier to the French Academy.† His experiments sufficiently prove the poisonous effects on dogs, of large doses, viz., gr. 15 and upwards. The blood was always found fluid, and the brain, lungs, and gastro-enteric mucous membrane congested. The symptoms in men and dogs are similar, viz., intoxication, disturbance of the senses, diarrhœa, hæmaturia, amaurosis, deafness (very frequent), aphonia, delirium, coma, epileptiform, convulsions, and death. [These statements correspond with those of Giacomini, as the result of his experiments; "Annali Univers. di Medicina," March, 1841.] Melier shows that the utility of moderate doses of quinine in certain forms of rheumatism had been long ago pointed out by other physicians, e. g., Morton, Leroy, &c., and the reporters refer to Haygarth's clinical researches, who obtained the best results from doses of gr. 10 and upwards of bark every four hours. Dr. Popham's observations on this subject‡ induce him to believe that bark is most useful in the fibrous form of rheumatism, and after the more acute symptoms have been combated by antiphlogistic means. If cardiac symptoms are present, the bark should be deferred till these are overcome. Periodicity of the symptoms, whether produced by the treatment or peculiar to the attack, calls for bark, and especially when profuse colliquative acid sweats are present, and the pulse small and feeble. Dr. J. J. Furnival§ contends that acute rheumatism consists essentially in an acid state of the blood, and that the best treatment consists of the use of alkalies and antiphlogistics, since adopting which, he has never met with a single example of cardiac complication. The treatment of rheumatism by large doses of nitre has also at-

* L'Examinateur Médicale, t. iii. No. 16; and Gaz. des Hôp. 11 April, 1843.

† Bulletin de l'Acad. Roy. de Méd., 31 May and 15 June, 1843.

‡ Dublin Medical Journal, Sept. 1844.

§ Lancet, June 1, 1844.

* Séance, Oct. 15, 1842; Gazette des Hôpitaux, Nov. 17.

† Gazette Médicale, Dec. 30, 1842.

‡ Gazzetta Medica di Milano, Feb. 1843.

tracted much attention. M. Martin Solon* appears to have been led to this mode of treatment by the observations of Brockleby, Macbride, and others, and by the consideration of the contra-stimulant, temperant qualities of the salt. Since 1840 he has thus treated 33 cases of severe acute rheumatism, demanding active means, of which 20 were cured from the second to the seventh day of treatment. Nitre, he states, is easily tolerated by rheumatic patients in doses of from $\mathfrak{z}\text{v}$. to $\mathfrak{Z}\text{v}$., in the 24 hours, if given in large quantities of diluent drinks. It is in acute cases only that it is useful, and its sole apparent effects are diminution of the heat of the skin and of the frequency of the pulse. It prevents the occurrence of endocarditis, and shortens the period of convalescence; but in complicated cases does not supersede the necessity for blood-letting. M. Monneret,† however, in an instructive memoir on the comparative effects of treatment by colchicum, nitre, and blood-letting, states that the influence of nitre on the progress of eight severe cases appeared absolutely null. Neither the heat of skin nor quickness of pulse was in the least affected. Professor Forget,‡ on the contrary, contends that nitre in large doses is a remedy of real efficacy in *certain cases*, and that in doses of from 8 to 45 drachms, given with diluents, it is rarely productive of any ill consequences. M. Requin's experiments§ are strongly corroborative of the efficacy of Dr. Corrigan's treatment by opium, but do not justify the abandonment of depletion. — *Ibid.*

FEVER, EPIDEMIC OF SCOTLAND.

A very extensive epidemic of fever has prevailed in Scotland, having many of the characters of yellow fever, and which has been described by several very competent observers. In Dr. Cormack's Treatise will be found a full account of the history of the epidemic and its peculiar features; but the distinctive characters are so well exhi-

bited in Professor Alison's short paper, and his high character as a philosophical observer (especially on this particular subject) is such, that his statement will be taken as the basis of the following account of this new epidemic.

After stating* that the ordinary fever had been rare, Dr. Alison says that the great majority of cases are essentially different in their symptoms and progress from strictly typhoid cases, and from any form of continued fever that he has seen generally prevalent: 1. In duration, which is uniformly short; some having a crisis on the fifth, a majority on the seventh, and hardly any protracted beyond the ninth day. When death takes place it is early; in every case he has seen or heard of, before the ninth day. 2. None have shown the true febrile eruption, though some have had petechiæ. 3. An unusually large proportion have become yellow, generally on the fifth day. This has been almost uniformly attended with fulness of the hypochondria, dulness on percussion, and tenderness — generally with much vomiting; sometimes of dark green bile, sometimes of the brownish matter like hare soup, so often seen in cases of organic abdominal disease. He has not seen any black vomiting, but the stools have sometimes had the character of mæœna. He thinks the bile, in this state, has never disappeared from the stools, and in fatal cases the bile-ducts were pervious, and contained (as also the duodenum) an abundance of bile. The liver was enlarged, but not otherwise diseased. Most of the fatal cases have been jaundiced; but many jaundiced patients have done well with little treatment. Most of these have shown the petechial spots, and in one case a blister applied to the epigastrium rose filled with serum quite black. 4. Both in the jaundiced and non-jaundiced cases, there has been much sickness and vomiting, always abating when the critical sweats took place. 5. *Almost every case has relapsed*, the majority on the fourteenth day: the relapses being of shorter duration than the first attack, and seldom attended with jaundice. In all fatal cases there was inflammation to a great extent of the mucous membrane of the bowels. 6. It has abated almost uni-

* Bull. de l'Acad. Roy., &c., t. ix., p. 130. See also, for further observations on the nitre treatment, Allgem. Med. Cent. Zeitung, 25 Mar. 1843, par Dr. C. F. Bartels.

† Arch. Gén. de Méd., March, 1844, p. 269.

‡ Bull. Gén. de Thérap., t. xxv., p. 5.

§ Bull. de l'Acad., Oct. 1843.

* Scottish and North of England Med. Gazette, Oct. 7, 1843; in London and Edinburgh Medical Journal, March, 1844.

formly by critical sweats, preceded frequently by violent rigors. 7. During and after the sweats, there have been severe pains of the limbs, of the character of muscular rheumatism. 8. The mortality has been very small, not more than one in thirty, and chiefly among the old, or where there was obvious complication. 9. *Every pregnant woman has miscarried.* In two the mother died; in one, though the hemorrhage was considerable, the uterus contracted well. In both the fatal cases rapid sinking followed an attack of pain in the side; in one there was pneumonia, and in the other enlarged and softened spleen. The body in this case rapidly putrified, and the blood-globules examined by the microscope, were irregular in form and size. The mode of fatal termination has been like that in other forms of fever, from embarrassment of function and alteration of structure of some particular organ, usually of the brain, with general failure of the circulation.

The great majority of cases required very little treatment. Remedies directed to relieve the symptoms and meet the local complications, generally mitigated the sufferings of the patient, and in some instances diminished or averted the danger. Headache and other uneasy symptoms of the early periods were relieved by bleeding, which, however, neither shortened the disease nor prevented relapses; and some had a slow unsteady convalescence. Leeching, shaving, and sponging the head, with purgatives, gave relief in the early stage, and afterwards an opiate on the third night, and repeated for several nights, was of signal service in palliating the very uneasy sensations of this period. Antimonials and Dover's powder favoured the sweats; leeches, blisters, and calomel and opium relieved the sickness and vomiting. Some with petechiæ recovered rapidly under the use of chlorate of soda: few required large doses of wine.

Does this fever proceed from the same poison as the ordinary typhus, or is it a distinct disease? The one has succeeded the other within narrow limits of time and space in different parts of the town. One man in the infirmary went through both diseases before leaving the ward. The new has differed from other epidemics by the extent and rapidity of its spread in summer time; but in regard to the mode of its extension (by contagion) and the persons liable to be affected, it has differed in nothing from other epidemics. Dr. Hen-

derson remarks,* that a third, fourth, or fifth relapse sometimes occurred, and he met with instances, of the same persons exhibiting the two forms of fever (the epidemic and typhus) within a very short time, which he considers a proof of their distinctness. He noticed also, enlargement of the spleen, and derangement of the functions of the kidneys; and in fatal cases terminating by convulsions, he detected urea in the blood and in the serum, effused within the cranium. [The same condition of the spleen was noticed by Dr. Graves in the Dublin epidemic of some years back.] Dr. Spillan† has called attention to the resemblance of the present epidemic in all the important features, to that described by Hippocrates as occurring in the island of Thasos off the coast of Thrace, where the same state of the spleen is referred to. (Vide Clifton's edition of Hippocrates on Air, &c., p. 62.)

In Dr. McKenzie's account of the Glasgow epidemic, especial reference is made to the peculiar form of ophthalmia which succeeded to this fever; in describing which, he states, that in the greater number of cases all the textures of the eye suffered from inflammation, which therefore, he thinks, may most properly be called *ophthalmitis*. Sometimes, however, the inflammation was confined to one or two textures. It bore most resemblance to rheumatic ophthalmia, or rheumatic iritis; but its closest resemblance was to sympathetic ophthalmia from wounds of the edge of the cornea or sclerótica. His treatment consisted of depletion, mercury, belladonna, and bark.

Dr. Arrott‡ has described the disease as it occurred in Dundee, where it was preceded by a gradual decline of the ordinary fever. Black vomiting, he states, was common, and the bile generally found viscid and thick. The post-mortem appearances corresponded remarkably with those observed by the French commission in Gibraltar, in 1828, particularly in reference to the condition of the liver, which

* Edinburgh Medical and Surgical Journal, Jan. 1844.

† London and Edinburgh Monthly Journal, Feb. 1844, p. 176.

‡ Medical Gazette, 1843, vol. i., p. 225. For further accounts of the epidemic as it appeared in Glasgow, vide Mr. Reid's paper in Lond. Med. Gaz., vol. i., 1843-4, p. 358, and Dr. Smith in Edinb. Med. and Surgical Journal, Jan. 1844.

Louis considers the anatomical character of yellow fever. — *Ibid.*

FEVER TYPHOID.

M. de Larroque calls attention* to the admitted occasional absence of all the so-called pathognomonic symptoms of typhoid fever, the rose-coloured lenticular spots, sudamina, diarrhoea, pain in the right iliac fossa, meteorism, and nasal hemorrhage, and therefore to their insufficiency as diagnostic signs. From his own clinical observations he believes himself justified in saying, that the four following phenomena are present from the onset, and place the typhoid nature of the fever beyond doubt: 1. Stupor, which presents various shades and forms, according to the causes, peculiarities, and intensity of the disease. 2. Dilatation of the pupils, which is signally invariable. 3. The pulverulence or brownish coating of the interior of the nostrils. 4. Gurgling in the situation of the cæcum, and termination of the ilium, which may be discovered in all cases if sought for with care. Whenever these four symptoms have been noticed, they will certainly be followed by the other phenomena which generally constitute the disease. M. Amedée Latour† also, advances the following propositions, though not unreservedly; 1. That the diagnosis of typhoid fever is not so clear, or easy as represented. 2. That some eruptive fevers, variola amongst others, may commence with an assemblage of symptoms identical with those which constitute typhoid fever. 3. That when the varioloid eruption is developed the typhoid symptoms disappear. 4. That these typhoid symptoms coincide with or complicate a number of different diseases. 5. That the typhoid symptoms, in the commencement of these diseases, have no influence on their development or progress. And lastly,

* Bulletin de l'Acad. Roy. de Med., t. viii., p. 15.

† Bulletin Gen. de Therap., Dec. 1842.

that at this period, they afford no indication for special treatment.

Some general remarks on the distinction between typhus exanthematicus and abdominalis, will be found in Dr. Miguel's paper.* He considers more active treatment to be required in the latter than in the former. Dr. Bartlett† has detailed three cases in which the appearance of sores on the tongue was regarded as critical in the course of typhus fever (*nerven fieber*), no mercury having been given. M. Rayer‡ has related to the French Academy a well-marked fatal case of typhoid fever occurring in a woman æt. 56, in which the pathognomonic anatomical lesions found after death were equally well marked. A similar case in a woman 63 years of age is given by Dr. Bartlett.§ [In his work on Typhoid Fever, Chomel stated that there was only one authentic case on record of typhoid fever occurring in a person more than fifty years of age; but in 1837, M. Prus read to the Société de Médecine, an example in a woman æt. 78.] Dr. Richter of Dusseldorf,|| relates a case in which *ammonia* was excreted by the skin of a patient suffering under typhus fever. Three days before death, when the patient was in a state of stupor, the face and hair of the head and beard were observed to be covered with a whitish shining matter-like spermaceti. On closer examination, the face was found sprinkled with minute spots of a whitish substance, which on being removed, left the skin with a punctated appearance. The excretion continued till death, after which the thighs also were found covered with small needle-like crystals. Chemical examination proved that the excreted matter was alkaline and ammoniacal, and contained in addition a whitish-yellow substance soluble in ether. [Liebig has shown the presence of ammonia in the air in the vicinity of typhus patients; and Donné and Prout ascertained that the rhomboidal prisms in the urine and fæces consist of phosphate of ammonia and magnesia, but the excretion of ammonia by the skin of typhus patients, is a fact equally new and important.] The es-

* Casper's Wochen., Dec. 17, 1842.

† Allgem. Med. Centr. Zeitung, 11 and 14 Jan. 1843.

‡ Bulletin de l'Acad. Roy. de Med., t. viii. p. 37.

§ Boston Med. and Surg. Journ., Oct. 1, 1842.

|| Oesterreich. Med. Wochens, 1843, p. 457.

says of Mr. Ross, on Typhus Fever, which have appeared in the "Lancet," contain the results of his attempts to apply the doctrines of modern organic chemistry to the elucidation of the pathology and treatment of this disease.* M. Rayer's observations can only be referred to as containing much that is interesting in reference to the existence of typhoid fever in animals.†

The following papers elucidating the statistics of fever in Great Britain, are worthy of notice, and may be referred to with advantage. Statistical and Pathological Report of Cases of Fever treated in the Royal Infirmary of Edinburgh, in the year ending September 30th, 1842, by Thomas B. Peacock, M. D.‡ On the Statistics of Fever in St. Thomas's Hospital, with reference to treatment, by H. Burton, M. D.§ This report contains an elaborate analysis of all the fever cases which fell under the author's care during six years. A paper on the Statistics of Fever in Edinburgh during a series of nine years, with especial reference to the influence of season, by Dr. Knox.|| The highest average number of cases occurred in the following months, and in the following order: December, November, January, March; and the lowest averages were presented by the months of February, August, and May. Some valuable practical observations on the continued fever of the middle and southern parts of Virginia, from 1816 to 1829, have been given by Dr. J. P. Mettauer.¶ A systematic Treatise on Fever has been published by Dr. E. Bartlett,** in which the author endeavours to show that the typhoid fever of France, apparently the most frequent form of fever in America, is a distinct species from the typhus of that country and of England. — *Ibid.*

Febrile Caloricity.

BY BENNET DOWLER, M.D.

One of the defects of my monograph

* Lancet, Feb. 25, and March 4, 1843.

† L'Expérience, 27th April, 1843.

‡ Lond. and Edinb. Monthly Journal, May, 1843.

§ London Med. Gazette, vol. i., 1843, pp. 204, 503, 599.

|| Ibid., Aug. 25, 1843.

¶ American Journal of Med. Sciences, July, 1843.

** History, &c., of Typhoid and Typhus Fever, by Elisha Bartlett, M. D.; Philadelphia, 1842.

upon this subject, alluded to in the Bulletin of Medical Science for August, has been, in some degree, remedied by the recent publication of several cases in the Philadelphia Medical Examiner, and in the Boston Journal of Surgery and Medicine — cases indicating the previous, as well as the *post-mortem* temperature in the same persons. I ask the favour of laying before the readers of the Bulletin of Medical Science, a few histories of a different character.

CASES ILLUSTRATIVE OF THE MINIMUM TEMPERATURE OF YELLOW-FEVER, INFLUENCED, AS IT IS SUPPOSED, BY ENORMOUS SANGUINEOUS EMISSIONS AND EXUDATIONS OF BLOOD.

J. H., born in Virginia, aged 30, boatman — last from St. Louis — stout and muscular — sick 12 hours — bled 20 to 26 oz. — in 10 minutes the blood gave 100°; 30 m. after, the hand, in 10 m. 103°; right axilla 5 m. 104° — left 5 m. 107° nearly — 5 m. 107°. [Was cupped freely, and bled from the arm in like manner a second time the same day.]

2d day. Cupped 20 oz. — died at 25 m. past M.; 25 m. after death — room 85° — axilla 10 m. 100° — 5 m. 103°, and stationary. Perineum 5 m. 101°; axilla 5 m. 102°, nearly — 5 m. 101°; rectum 10 m. 102° — 5 m. 102°; axilla 10 m. over 100° — at 1 h. and 20 m. after death. The muscular contractility, feeble, transient (10 m.). A blow on the flexors of the extended arm, caused the cadaver to drag a heavy hatchet along the stone floor to his side, unable to raise it up to the chest — a second blow caused no motion. Rigidity tardy and slight.

H. D., born in Ireland, aged 23, resident two years; treatment — baths, enemata, sinapisms, blisters, quinine, porter, castor-oil — 14 lbs. of blood drawn from the arms in 5 days at several times — extensively cupped twice — 40 leeches, and had *spontaneous hemorrhage before he died*. (I did not witness all these facts, but many physicians and students did.) Two hours after death — air 84°; axilla in 25 m.

100°; rectum 10 m. 98°. Axilla 4 h. after death 95°. In 5 hours abdominal convexity from offensive gas; body, limbs and neck, free from cadaveric rigidity—no contractility—body large—free from emaciation, yellow, general anæmia, etc.

Mrs. D., aged 30; had before death an enormous tumefaction over nearly half of the exterior of the left chest—Dead 30 m.; air 87°; axilla 10 m. nearly 100°; vagina 10 m. over 100°;—all the limbs contractile; the arm raised—the hand was carried to, or near, the umbilicus after every blow; in 3 hours a slight rigidity set in, but totally disappeared in 5 hours, leaving every joint limber. Purplish discoloration of the skin on the left chest; the cellular tissue densely infiltrated with semi-organized blood; below this stratum and behind the mamma an enormous inter-muscular apoplexy, or to speak more mechanically, a reservoir of fluid blood, was found, amounting to several pounds, enclosed between the clavicle, the sternum, the inferior border of the great pectoral, and the axilla. This great cavern, two feet in circumference, was deepest (not less than 3 inches) under the upper margin of the mamma, and was not intersected by the fibres or shreds of any tissue whatever.

TYPHOID FEVER.

May 2d, 1844. P. M., born in, and last from France; aged 35; resident 7 years; sick 8 days; treated with morphia; vs. 8 oz.; cups, enemata, blister, emetic. At 4½ hours before death—air 88°; hand 10 m. 90°; axilla 10 m. 104°; fold of the arm 5 m. 99°; popliteus 5 m. 99°. At 30 m. after death—air 79°; axilla 5 m. 104°; 5 m. 105°; popliteus 5 m. 100½°; axilla 5 m. 105½°; popliteus 5 m. 100½°; 5 m. 101°; axilla 5 m. 106°, stationary; bend of the arm 101°, stationary; rectum 5 m. 100°; bend of the arm 5 m. 101°; groin 5 m. 102°; bend of the arm 5 m. 100°; groin 10 m. 100°; hand 5 m. 91°; 5 m. 100°; rectum 5 m. 106°; 5 m. 107½°; (arm extended, axilla exposed;) axilla 5 m. 101°; rectum 3 m. 108°; axilla 3 m.

101°; rectum 2 m. 109°; axilla 2 m. 101½°; rectum, 2 m. 110½°; axilla 2 m. 102°; rectum 2 m. 110½°. Darkness put a stop to these experiments, which were made with an accurate Fahrenheit and a Réaumur's thermometer, at the same time. However incredible may seem these calorific movements, I must say that they are facts, most carefully noted at the moment of their occurrence.

May 3d; 17 hours after death—air 83°; brain 20 m. 83°; 10 m. 83°; thigh (the centre), 15 m. 89°.—ANATOMICAL SUMMARY:—Mucous tissues of the chest red; serous red, vascular; redness, brittleness, and hypertrophy of the heart generally; its exterior, and much of its pericardium, covered with a red, strawberry-like, shaggy, membraniform exudation; brittle, spongy, and uneven: * hyperæmia of the left lung; crepitant: right lung many times heavier than natural; sank in water like a stone; bled when incised (*red hepatization*), moderate hypertrophy of the spleen, liver, and mesenteric glands. The elliptical patches, (glands of Pey-er,) were developed in the pustular form, having small, central, black dottings. Nearly two pounds of indurated feces, lodged in, and almost completely enveloped by, the pouches of the large intestine. The duodenum was tied over the cock of a hydrant; a powerful stream of water, sent through the whole tract of the bowels, failed, in half an hour, to dislodge these masses. I am the more particular in this case, because its calorific history is very irregular. To say nothing of the greater heat in the dead than in the living body, the post-mortem comparisons alone are sufficiently curious: the rectum an hour after death is 100°; in two hours it is 110½°, and when the experiments ended it had fallen only ½°; the dead hand in 5 m. rose 9°, that is 10° beyond the living.

* These appearances of the heart and its annexes, not here fully described, are well represented in Prof. Cruveilhier's *Anat. Path.* 16 *Livr. Pl. 2. Mal. du Cœur—Pericardite.* Fol. colored, Paris.

The following case of typhoid (a rare malady in this climate), corresponded very well with Prof. Louis's descriptions both in its ante-mortem history and morbid anatomy, with the exception of the "rose-coloured lenticular spots." The lesions in number, magnitude, form, and colour, bore a strong resemblance to those extraordinary (I will not say exaggerated) plates, four in number, which Cruveilhier has given to illustrate, what he calls *L'entérite folliculeuse primitive aigue*. (*Anat. Path. 7c. Livr. Pl. 4, 3, 2, 1*). This case, strange enough, represented all his varieties, as, 1, *la forme granuleuse et gaufrée*; 2, *la forme pustuleuse*; 3, *la forme ulcéreuse*; 4, *la forme gangréneuse*.*

W. L., born in Germany, aged 22; last from New York by sea; resident 3 weeks; sick 30 days; treated chiefly with mercurial inunctions, blisters, quinine, and antimonials. Jan. 30, air about 77°; hand 12 m. 104°; axilla 10 m. 108½°; popliteal 5 m. 106°.

Feb. 5; air 73°; axilla 10 m. 104°; hand 5 m. 100°; died 40 hours afterwards.

SIMPLE FEVER.—(*Recovery*.)

R. M., aged 19; acclimated; sick 4 days; air 83°, and growing warmer. Bled about 16 or 17 oz. in a large delf wash bowl: during the operation, the mercury oscillated from 94° to 95½° in 3 m. after, the blood coagulated at 94°, in 15 m. fell to 93½°, and then at the end of every 5 m. as follows, with the utmost precision:—92½°, 91°, 90°, 89°, 88°, 87°, 86°, 85°, 84°, 83°, 82°, 81½°, 81°, 80½°, 80°, 80°. The bowl was slowly heated (for 20 m.)

* Plates, still more than descriptions, are liable to be overcoloured; the former may represent form, colour, and size, but utterly fail in the more important elements, of induration, softening, brittleness, tenacity, vascular fullness and collapse, weight, etc., and, yet Professor C., in his plates of the diseases of the stomach, not only attempts to portray *cohesion* or *consistence*, but to distinguish its varieties as *rammollissement pulaccé*—*ram. gelatiniforme* (*Anat. Path. L. 10, Pl. 1, 2*). A hard biscuit differs from a soft one, and so of an apple; but who can paint this difference?

VOL. III.—30

in the sun, and over warm water, so as to raise the mercury in the centre of the clot to 94°, the bottom being 96°. The caloric entering chiefly by the exterior, the whole mass of metal is supposed to have averaged a greater temperature than 96°, while the blood was secured into a cold vessel, and, *a priori* ought to refrigerate by contact, with a velocity incomparably greater. From first to last, the thermometer remains in the clot. The bowl is in the same place. The air is nearly stationary. The physical caloric has the advantage greatly; it permeates the whole vessel. Will it dissipate itself by contact and radiation more slowly than the animal or morbid caloric of the same temperature? Let us see. The starting point is the same. At the end of every 5 m. the vessels are as follow: 92°, 90°, 88½°, 87½°, 86½°, 85½°, 84½°, 84°, 83½°, 83°, 83°, thus that in 1 hour, the morbid heat falls 10°, in 1 hour 30 m. it reaches its equilibrium or stationary point;—the physical caloric reaches this point in 45 m., that is, in exactly half the time the animal caloric loses nothing during the first 15 m. in a cold vessel. The physical caloric, though in a heated vessel, loses nearly 6° in the same period.

At the conclusion of this experiment (made Aug. 2d, 1845), the patient's temperature was taken as follows: hand 3 m. 99½°, 2 m. 100°, 2 m. 101°; 1 m. 101°, axilla 2 m. 102½°, 1 m. 103°, 1 m. 103½°, 1 m. 103½°, 1 m. 103½°; bend of the arm 1 m. 100½°, 1 m. 101°, 1 m. 101½°, 1 m. 102°, 1 m. 102°.

SUDDEN DEATH.

During a paroxysm of fever which lasted six or seven hours—an enormous stone in the bladder.

A Parisian, fat and stout, resident 7 years, aged 46 (whom I had recently cured of an acute pleurisy), called one morning for advice—said he had had a "thousand claps"—had suffered much in the pelvic and lumbar regions; was then passing bloody urine—refused to be sounded, or to take anything, but "*les ptisanes*"—ate, drank,

and walked about during the day. At 9 P.M., after a violent chill, was affected with intense fever; 7 hours after the chill, he arose to urinate, and fell instantly dead. In from 30 to 50 minutes after, I saw him:—neck becoming rigid, thumbs flexed into the palms; eyes open, extremely prominent, injected, ecchymosed, glassy, pupils dilated—face tumid, angles of the mouth depressed: (air mild, May:)—axilla 15 m. 105°, 25 m. more 105;—5 m. 104°; 15 m. 104. Post-mortem examination restricted to the bladder, which was internally red, rough, thickened, and vascular, and contained a flattened calculus, nearly two inches in its greater diameter, and half as thick.

On the same day, this man's *chère amie*, who was almost moribund from the most profuse menorrhagia, gave, after repeated trials, only 82° in the hands. She recovered—but, a few weeks after, she died in the country.

In conclusion, I must say, that if I do not make any deductions from these and similar facts, it is not because I think them devoid of practical uses in Physiology, Pathology, and Therapeutics.

PAPERS READ AT THE MEETING OF THE BRITISH ASSOCIATION.

Our readers (says the *Athenæum*) are aware, from the Report of the Council (see *ante*, p. 611,) that it had been, by a resolution of the General Committee, referred to the Council to consider the propriety of so modifying the title and regulations of this Section, that it might include a more general range of subjects; also of the proceedings thereon taken by the Council. On Tuesday, at the close of the Sectional proceedings, Dr. Haviland, the President, informed the members present that the Council referred the subject back to the Committee of the Section, requesting a report thereon during the present meeting; that after an anxious consideration, and with the assistance of a large committee, formed specially for this purpose, the following resolu-

tions had been passed:—“That the Committee of Section E. of the British Association are fully convinced of the utility and importance of the Section, and that it be recommended by the Committee that the title of the Section be changed to that of ‘Physiology.’”—It was further resolved, “That the foregoing resolution, when presented to the General Committee, be accompanied by a brief statement of the reasons which led to the recommendation.”—These resolutions had been placed in the hands of Prof. Phillips, accompanied by the brief statement alluded to, for presentation to the General Committee. Dr. Haviland concluded by stating that the object desired to be effected by the change proposed was the introduction into the Section of all those papers which elucidated life under all its conditions, normal and abnormal, whether by the aid of chemistry, anatomy, statistical inquiry, or pathological research. In order that this should be the result at future meetings, he requested the assistance and co-operation of all the members who were anxious that the proceedings of this Section should sustain the dignity of the profession and the character of the Association.

The Section did not meet till Saturday.

Mr. Sibson presented an apparatus for delineating correctly the relative position and size of the viscera, either in their healthy condition or changed by disease. It consisted of a square frame, covered by transparent lace or muslin, which will permanently bear chalk marks. By taking the outlines of the objects to be sketched (deformities, well marked conditions of thoracic or abdominal viscera, &c.) on the surface looking perpendicularly at the object, a correct outline is easily produced even by those who are not artists; this sketch can be readily transferred to paper by pressure, and if necessary may be reduced by the application of the pentagraph. M. Sibson gave an illustration of its use by making sketches from the living body, and entered into numerous pathological details to show the importance of frequent delineation, to ascertain the progress of internal and external disease during treatment.

Dr. Brooke suggested an improvement to the apparatus by attaching to the frame a pencil moving parallel to itself and perpendicular to the plane, by means of jointed rods, as in the sockets sometimes adapted to a reading chair.

Dr. Macdonald read a paper "On Cranial Vertebrae." The author commenced by enforcing the value and necessity of the study of what had been termed Transcendental Anatomy. After alluding to the labours of the foreign and British investigators of the subject, Dr. Macdonald laid down the elementary parts forming a vertebra, which he stated to be *first*, a body, forming part of the *caulis centralis* of the vertebral column; *second*, the posterior laminae, which meeting on the mesial plane form the arch of the vertebral canal, having the spinous processes more or less developed: each lamina is again subdivided into three elementary divisions, which he denominates protomer, deutomer, and tritomer; besides these there are, *third*, anterior laminae connected with the *caulis centralis*, exemplified in the ribs and part of the pelvis, and also in the bones of the face. Retaining these divisions of each vertebra, the author described the cranial vertebrae, as three pairs arising from the spine: *first*, the occipital; *second*, the sphenoidal; *third*, the ingressio-ethmoidal; by attentively examining the component laminae of these vertebrae, he identified all the usually described portions of the cranium. The facial bones he resolved into two pairs of vertebrae: *first*, the superciliary; *second*, the adnasal. By a minute demonstration the author endeavoured to establish the details of his system, which he contended was applicable to all the zoological classes and as well marked in the insect tribe as in the mammalia.

Dr. Brooke presented an instrument to assist in the discovery of foreign bodies by auscultation. It consisted of a catheter or sound, with a circular sounding-board, six inches in diameter, attached perpendicularly at its extremity, which increases the sensation derived from the contact of its other end against a small calculus or fragment after lithotripsy, which might otherwise escape detection, and lay the foundation of future disease. The effect of the sounding-board was demonstrated. A sound produced by the contact of a small fragment in a small bag, which could scarcely be heard by the holder of the instrument without the sounding-board, became perfectly audible on its application.

Dr. Leeson read a paper "On Endosmose and Exosmose, as influenced by Galvanism." He first adverted to the experiments of Dutrochet and Porret; from errors in these experiments the original idea of Dutrochet was soon abandoned, viz., that electricity was the efficient cause of the phenomena; these errors were explained. The author investigated the subject by a series of experiments free from those errors, some of which were exhibited: from which he concluded that endosmose and exosmose were greatly promoted by electricity, but that although this is so, the phenomena may exist without any galvanic or electrical condition being present.

Dr. Fowler communicated some further particulars relative to the case of the woman who was blind, deaf, and dumb, in Rotherhithe workhouse;—her faculties have improved by education.

Dr. Laycock read a paper "On the Connecting Fibres of the Brain, in reference to Thought and Action."—The author stated, that he looked on those views as correct, which considered the brain as an extensive periphery of nervous matter, analogous to that which exists on the surface of the body; on this periphery, sensorial changes are excited, first by *incident excitator* impressions derived from without the external periphery; secondly, from impressions derived from other portions of the brain, the internal periphery; there was thus a set of intercommunicating fibrils between all parts of each symmetrical half of the brain and spinal cord. Dr. Laycock observed, that this intercommunication actually took place in the ganglia of the spinal cord, an impression being diffused through the parts of the ganglia. He showed that this view of the internal mechanism of the brain explained the cases of paralysis in which the muscles act normally under certain conditions, as, for example, when an individual cannot speak what he *thinks*, but is able to read aloud, or repeat what is spoken to him. Dr. Laycock was of opinion that in such an example there was no interruption of continuity between the auditory and optic nerves, and that part of the brain which subserves to language, nor between the latter and the anterior motor part of the medulla oblongata; but that the cause of the vocal paralysis experienced when the individual attempted to express his thoughts, was an interruption of continuity of the parts communicating between the portions of the brain (or internal periphery), subservient to

thought and that subservient to language.

Dr. Brooke described "A new Form of Suture, applicable to all Plastic Operations."—He first adverted to the modes of suture usually practised, and showed the causes of failure (particularly in internal fissures) with the common interrupted, quill suture, &c.; the principal being the undue stricture of parts intended to heal; besides that, internal fissures occur, to which the usual modes are inapplicable. In the new suture, Dr. Brooke kept the edges of the fissure close by ligatures passed through a short distance from the edges, and having perforated glass beads with the ligatures passed through them and closely knitted to the exterior part of the perforation, and thus causing the pressure to be exerted only on healthy parts; this he denominated the *bead suture*. When applied to internal parts, it can only be applied by instruments devised for the purpose, which Dr. Brooke exhibited, and described cases in which the application had been successful. — *Athenæum*.

MEDICAL SCIENCE.*

Dr. Laycock presented a brief notice of a case of Purpura Hæmorrhagica, by T. S. Wells, Esq., with a drawing of the heart. The subject of the disease was a strong able mariner, who died eight days after the first symptoms presented themselves; there was effusion of blood into the ventricles of the brain, and also beneath the external serous covering of the heart, the appearance of which was represented in an accompanying drawing; this result the author deemed of great rarity, and on this account he submitted it to the Section.

Dr. Haviland had seen a similar case; the preparation of the heart in which, he exhibited to the Section. He also observed that a similar appearance, or nearly such, is found in acute cases of Pericarditis; of this also he exhibited a preparation.

Dr. J. F. Duncan read a paper "On a Peculiar Form of Epidemic observed amongst Children in the Winter 1844-5 in Dublin."—The attack was ushered in by considerable fever, and after an interval of some days the gums were found to be partially ulcerated at the insertion of the teeth,

the fangs being exposed; they became also swollen, red, and spongy, and exhibited a considerable tendency to bleed, inasmuch that hæmoptoe occasionally resulted from this cause. The disease was very severe, and in most cases, either directly or in consequence of relapse, terminated fatally; it seemed to be a part of a deep or seated affection, namely, an enteritis of an extensive and severe kind. Its importance, in a pathological point of view, arose from the liability to confound it with that ulceration of the gums, which is the consequence of the administration of mercury.

Prof. Fisher read a paper "On the Vascularity of Tubercle."—The entire paper consisted of explanations of an extensive series of drawings of tubercular deposits taken from mesenteric, cervical, and bronchial glands; these drawings showed traces of organization and the passing of the injection between portions of the masses: from their appearance Prof. Fisher concluded tubercle to be vascular, and submitted them as proofs for examination.

Dr. Kingston said that Dr. Fisher's observations in proof of the vascularity of scrofulous tubercle agreed with his own, published in the Transactions of the Medical and Chirurgical Society for 1837, and with those of M. Lugol some years afterwards. The reason that the vessels of tubercle are not always visible or capable of injection is, that they are extremely minute, and do not carry red blood, except when the part is inflamed or congested:—just as some of the vessels of even the natural pulmonary structure were found by Reisseissen to be too minute to admit even the finest injections.

Dr. Leeson presented and described an apparatus for minute injection.

Dr. Thurnam gave a short notice of a case of Spina bifida, the preparation of which he exhibited to the Section; it demonstrated the exact condition of the bones and ligaments of that portion of the vertebral column when the deficiency from arrest of development occurred.

BULLETIN.

Philadelphia, October, 1845.

* Proceedings of the British Association for the Advancement of Science. — Held at Cambridge, July, 1845.

CLINICAL MEDICINE.—One of our contemporaries, in lauding College clinics, as we may call Dispensary prac-

ties at the building, gives a rub to some of us, who have not looked through his glasses, when examining into the merits of the present fashion. We had proposed to make a few remarks, resting chiefly on statistical data, in reply; but shall withhold them as inopportune at this juncture. We would say, however, that the opinion, heretofore expressed of the advantages, and we may now add downright necessity of our medical schools having their own hospitals under the jurisdiction and control of their own Faculties, are becoming daily more apparent.

College Dispensaries are but the preludes to College Hospitals, towards the endowment of which we are fully persuaded that this community, including nearly all the members of the medical profession in it, will heartily contribute, so soon as a definite and practical plan of operations is offered by the respective Medical Faculties. It is not to be supposed for a moment, that any Philadelphian, still less any Philadelphia physician, will withhold his active support from a well matured plan for maintaining in their full vigour the medical schools on which so much of the reputation of the city depends, and from which so many direct pecuniary advantages accrue to its inhabitants themselves. Not only must there be no halt, retrograde movement, but there must be decided progression and improvement.

We speak thus pointedly of what ought to be in this matter, because we know what soon will be, for, without pretending to the gift of divination, we feel assured that, ere long, clinical instruction in Philadelphia will be placed on a wider and firmer basis, and present more decided practical advantages to the student than at any former period.

Medical College Circulars.

We have received the *Annual Circular of the Medical Department of Illinois College*. This Institution is in Jacksonville, has a body of sixteen

30*

trustees, nine censors, the latter of whom are all medical men, and a Faculty consisting of six professors. The class during the last winter numbered twenty students, of whom five received, at the expiration of the session, their degree of doctor of medicine.

The examination for a diploma is made by the Medical Faculty assisted by the board of Censors.

In the *Third Announcement and Catalogue of the Rush Medical College, Chicago, Illinois*, we see a list of a Board of Trustees, of which the Governor, and Lieutenant-Governor of the State, the Speaker of the House of Representatives, and the President of the College, are *ex officio* members. The Faculty is composed of six professors.

JOURNALS.

We are glad to see the name of Dr. V. J. Fourgeaud added to the editorial body by which the *St. Louis Medical and Surgical Journal* is conducted. Such an accession will, we doubt not, contribute to secure still farther variety and vigour to its pages. The initial article in the August number by Dr. Fourgeaud, on Eclecticism in Medicine, merits a careful perusal.

The irregularity in the receipt of the *New York Journal of Medicine* is a source of frequent regret to us. It was only the other day that we received the July number.

A new journal, entitled the *New York Medical Intelligencer and Eclectic Gazette*, edited by Dr. D. S. Meikleham, bears, as its title implies, the imprint of New York, August 17th, No. 1. It is in quarto form, consisting of sixteen well and closely printed pages, on good paper, and is to appear every fortnight. The *Medical Intelligencer* will consist mainly of selections from European Journals; and judging from the specimen before us, these will be made with suitable know-

ledge and discernment. Just now they are confined to the English journals. After a while the editor will doubtless give himself a wider range, so as to embrace the progress of Continental medicine.

Republication of the *London Lancet*, new American Series. This is published monthly, and is, we believe, a faithful transcript, including engravings, of the London journal. The merits of this journal are too well known to require any commendation from us in this place.

We did not notice at the time of its reception, the June number of that excellent periodical, the *American Journal and Library of Dental Science*. It makes, by its intrinsic merits, strong claims to the support of Dental Surgeons and general practitioners, in both town and country.

UNIVERSITY OF PENNSYLVANIA. We received a copy of a Report on the Medical Department of this Institution, for 1845, addressed to the Alumni of the school, by the Medical Faculty.

We always feel a lively interest in whatever relates to our Alma Mater, Even when we may have been thought hypercritical respecting some of her proceedings, our wishes for her welfare were earnest and strenuous. This Report contains lists of the Trustees of the University, of the Medical Faculty, and of the medical class of the session of 1844-5, and medical graduates of the year 1845, followed by some statistical returns, viz., of the number of students attending lectures, and of graduates for the last twelve years. Complacent reference is, also, made to the course of Clinical Instruction within the walls of the University; and the medical and surgical diseases exhibited, and the cases lectured and operated on, are mentioned. *Regulations of the Medical Department of the University*, and an an-

nouncement of the session of 1844-5, conclude this report.

ESTIMATE OF POPULATION.*

Prof. Pryme read a paper "On the different Methods employed to estimate the Amount of Population." These were worthy of being investigated; because, in relation to history, some one or other of these methods was the only means available for interpreting facts. He enumerated many records of different countries and ages, to show that statistical information as a foundation for economic science, had been sought, though errors had been committed as to the right mode of attainment. There were four different bases of calculation laid down, on each of which statistical criticism found cause for objection and correction. 1. Taking the number of houses, and an average to each house; the fallacy of result from this mode was illustrated by reference to various countries, at their various stages in the progress of civilization, and by the different habits of persons in the same district of the same country. 2. The estimate of population from the records of deaths, births, and marriages was still more fallacious. Among other illustrations, he mentioned his having known of five marriages between six people, with only three children as a result; and such perturbing influences are frequent. 3. Comparing a certain part of the population, — as, for instance, those capable of bearing arms, an element often occurring in history; to which he believed that more value was to be attached than any of the preceding methods. 4. Actual enumeration; of course the most perfect method, but one requiring a more complete machinery than had been hitherto applied. — *Athenæum*.

ETHNOLOGY.†

"On the Moral and Intellectual Character of the New Zealanders," by Dr. Martin — He considers the New Zealander may be classed in that stage of man's progression when the indications of sense are not altogether corrected by reflection and intellect, when passion is somewhat tempered, but not controlled by moral and religious feeling; when hatred is stronger than benevolence, and self-love is unrestrained by conscientiousness; when, in

* Meeting of British Association for the Advancement of Science. † Ibid.

fact, the mere intellectual perception of self-interest is the chief regulator of the conduct. As far as mere perceptive faculties are concerned, the New Zealander may be said to be inferior to Europeans, but superior to many other uncivilized people. The New Zealander is a paradox in every light in which we regard his moral character. Religion, veneration, or superstition, are the strongest feelings, and yet they are, in most cases, unaccompanied by conscientiousness, which is so essential to the formation of a moral and religious character. He has laws which define conduct, but they are founded on self-interest, superstition or vanity. Truth and moral feeling cannot be traced as elements in any part of his conduct or customs. His excessive vanity and want of truthfulness makes him boastful, and tends to give an exaggerated character to all his statements. Individual quarrels or combats are of rare occurrence; while the most extraordinary disregard for life will be found to exist without courage. Notwithstanding the general character of the New Zealander for benevolence, he is destitute of natural affection as a feeling; neither the parent nor the child cherish towards each other any of that strong regard which is natural to, and frequent among Europeans. His social morality is low, the absence of virtue not being considered even a disgrace, much less a crime.

"On Cretinism," by Dr. Twining.—Dr. Twining first described its forms and degrees. Marsden saw goitre in the valleys of the Ural, Baikal and Caucasian mountains; Forbes in the Himalaya, and McClelland in the Shore Valley. Sir G. Staunton saw cretins in the narrow valleys of Tartary, and that they lead a mere animal life, acting alone from the impulse of their senses. In Africa there are only two parts known where goitre occurs. Leo Africanus saw goitre in the high mountains of Atlas in Morocco, and Mungo Park among the Kong mountains in Bambara. Of cretinism in America we have fuller accounts. Richardson saw goitre and Cretins on the banks of the Saskatchewan, and near the sources of the Elann and Friedeu rivers. Prof. Barton states goitre to be prevalent at Oneida among the Americans and the Dutch settlers, and in all the State of New York, near the Mohawk river. It occurs also in Lower Canada, in marshy districts. In South America goitre occurs independently of cretinism in Nicaragua and Sante Fé. Humboldt saw the most frightful cases of goitre on the Magdalena

river, and chiefly higher, to the elevation of 6,000 feet above the sea, on the high plain of Bogotá, and states that the copper-coloured natives were generally free from goitre. It occurs also in Quito and the Onachiffa Valley near Lima, under various atmospheric influences, and on the Corderillas. In the Villarica Valley, in Brazil, 4,000 feet above the sea, goitre is frequent, not only in man but animals, as the goat; and many villages are filled with cretins. Prof. Pöffig states that in the Andes in Chili, on the east side, in some races he did not see a case of goitre; and yet in the white inhabitants, who live exactly as the natives, it prevails in a great degree. On the Andes, between Santa Rosa and Mendoza, the peasants dwell on the west side as high as 7,000 feet above the sea, and on the east to 6,000 feet, and are free from goitre, but lower, at 3,500 feet, goitre is endemic. The nature of the formation seems to have no direct influence as a cause of cretinism, as cretins are found on all. It would seem that where the springs come from the limestone, goitre is most frequently endemic; but as in many villages where goitre and cretinism prevail there is no lime, it cannot be the sole cause. Dr. Twining concluded by expressing a hope that the many travellers there assembled would, when investigating the geology or the races of the high mountain chains, not forget the state of the inhabitants of the valleys with regard to cretinism. That Cretins can become healthy and intelligent has been proved by Dr. Guggenbühl, in the success that his benevolent exertions at the Hospital for Cretin Children, on the Abendberg, near Interlachen, have met with; but it can only be by the united efforts of many that a scientific account of cretinism can be attained. In order to facilitate such inquiries, Dr. Twining suggested the following method: first, to state the name of the place, its situation and elevation above the sea, and the race; secondly, the geological formation, springs and climate; thirdly, the state of the houses and the habits—whether goitre only prevails, or is accompanied by cretinism.

"On the Natives of Old Calebar, Africa," by Prof. Daniell.—The natives, although of Eboe extraction, present some physical deviations that serve to distinguish them from other tribes of a similar derivation. The natives of the Bonny Mun, who are purely of Eboe descent, and, therefore, less mixed with the people of other nations, may be taken as the typical illustra-

tion to institute comparisons. They are generally of a short stature, slight form, and light yellow skin. The trunk and other portions of the body are in conformity with this physical configuration, being somewhat robust and symmetrical in mould, with a tendency to great muscular development. The hair of the head of girls is invariably shaved off, with the exception of a small tuft, and is not suffered to grow until they are married; it is then twisted into a number of plaits decorated with beads. Portions of their frame, and particularly the face, are tattooed in circular figures, and the anterior surface of the arm in men as well as women, is ornamented with round smooth cicatrices of the size of a shilling. The government of this people is a monarchical despotism, rather mild in its general character. They destroy their criminals by poisoning, drowning and decapitation. A simple contract between the parties constitutes the law of marriage; and prior to their residing finally together, they sit in state for several days, well attended, and in gaudy attire. Polygamy exists amongst them in full force. Adultery is atoned for by a dreadful death. Among their funeral rites is that of immolation, on an enormous scale, of men, women and children; and so fearful in former times was the observance of this custom, that many towns narrowly escaped depopulation.

Dr. Latham considered that the natives of the Old Calebar belonged to a group which he called Ibo-Ashantee. — *Ibid.*

BIBLIOGRAPHY.

Wood and Bache's Dispensatory.*

The rapid sale of the many thousand copies of the fifth edition, requiring the publication of this the sixth edition of the United States Dispensatory, by Drs. Wood and Bache, attests the continued popularity of the work; and

* The Dispensatory of the United States of America. By George B. Wood, M.D., Professor of Materia Medica and Pharmacy, in the University of Pennsylvania, and one of the Physicians to the Pennsylvania Hospital, &c., &c. And Franklin Bache, M.D., Professor of Chemistry in Jefferson Medical College of Philadelphia; one of the Vice-Presidents of the American Philosophical Society, &c., &c. Sixth Edition, carefully revised. Philadelphia: Grigg & Elliott, 1845. pp. 1368.

the announcement by its authors of its having been subjected anew to a careful revision, is a guaranty that the merits which have hitherto characterized it will still be apparent, in all that relates to the selection, preparation, and dispensing of the articles of the *Materia Medica*.

Amidst the conflicting claims of the immense list of medicinal substances and compounds for notice and therapeutic distinction, on the part of their various historians and eulogists, it is a task of extreme difficulty to be able to preserve an impartiality free from indifference, and yet be the result of careful and conscientious inquiry and experiment. Between the two common extremes of ready credence and downright pyrrhonism; an over estimate of curative properties on the one hand, and a blunt denial of such properties on the other, the authors of this Dispensatory have preserved a happy medium. Conservative of what they believe, from past experience, to be really good, they are not, however, opposed to the addition and incorporation of new materials and principles. If fault be found, it will probably be with a backwardness to admit the pretensions of new claimants for place in their pages. A promise of capabilities will not persuade them: they must have clear convincing evidence of good service done before they receive new remedies or give currency to new modes of treatment. They may not always give us the last novelty, but then we are sure that what they do give us is worthy of our notice and even confidence.

Fowne's Elementary Chemistry.*

We cannot better designate the objects proposed in this work and the aim

* Elementary Chemistry, Theoretical and Practical. By George Fownes, M.D.; Chemical Lecturer in the Middlesex Hospital, Medical School, &c., &c. With numerous illustrations; Edited, with Additions, by Robert Bridges, M.D., Professor of General and Pharmaceutical Chemistry in the Philadelphia College of Pharmacy. Philadelphia, Lea & Blanchard, 1845. pp. 460. 12mo.

of the author in publishing it, than by quoting the initial paragraph in his Preface, in which he tells us :

"The design of the present volume is to offer to the student commencing the subject of Chemistry, in a compact and inexpensive, but, it is hoped, not unintelligible form, an outline of the general principles of that science, and a history of the more important among the very numerous bodies which Chemical investigations have made known to us. The work has no pretensions to be considered a complete treatise on the subject, but is intended to serve as an introduction to the larger and more comprehensive works in our own language and in those of the Continent."

Mr. Fownes's volume may be safely recommended as "a convenient and useful class book," well adapted to the wants of the student, and to serve as safe instruction to the more advanced and complex parts of the science of chemistry. Numerous wood engravings facilitate a comprehension of various apparatus and experiments. To the American reader the work has the farther recommendation of having been brought out under the editorial supervision of Dr. Bridges.

Dixon on Diseases of the Sexual Organs.*

The title of this volume sets forth its adaptation to popular and professional reading. We are constrained to say *in limine*, that no treatise in disease can be prepared to meet this desirable view. Such an attempt must fail in the very nature of things.

The recondite views and details required for the instruction of the professional reader are caviare to the mere general reader; as, on the other hand, the popular form of presenting the subject, by the avoidance of technicalities, brevity of description, and the introduction of sometimes remote analogies for illustration, must be uninteresting, meagre, and common-place to the former.

There are subjects of common interest and appreciation by all classes of

* A Treatise on Diseases of the Sexual Organs. Adapted to Popular and Professional Reading, and the Exposition of Quackery, Professional and otherwise. By Edward H. Dixon, M.D., &c., &c. New York: Burgess, Stringer, & Co. pp. 360. 12mo.

the community, on which medical men may properly write for the benefit of all, and in such a manner as to be generally understood by persons of common education. These relate to hygiene, general and special, public and private, and will include also the causes of disease and the means of avoiding it; but beyond this, as when therapeutics are enlisted for the cure of disease, the problem becomes too complex a one to be understood, or its solution to be attempted except by the initiated few, those educated and long trained for the purpose, in fine, by regular physicians.

One of the disadvantages of attempting to bring pathology and therapeutics within the ready comprehension of the general reader, is the proneness of the author to present, as well established axioms views still contested, and which are only susceptible of being presented in a qualified sense to the professional reader. Examples of this nature occur in the present volume; as when the author describes what he believes "the most uniform and unvarying symptom by which we shall know when a person has contracted syphilis;" and in another place, where he speaks of "the specific and neutralizing power" of mercury; of bubo being the store-house, from which the poison of syphilis is to go into the blood; or that "there can be no doubt of the expediency of administering mercury in some form, as the best and only certain means of cure." There is not one of the propositions here adverted to, or repeated, which he lays down so dogmatically that is not contested in the profession; and there is not one, the implicit credence of which, by general readers, is not capable of misleading them, causing suspicions and erroneous judgments of their medical advisers, who, in certain circumstances, might draw a different diagnostic conclusion, and recommend a different therapeutic treatment from those advanced by the author.

In making the above comments, we do not impugn the sincerity of the

author in his announcing his work to be adapted to the exposition of quackery; although, at the same time, we must be allowed to doubt, very much, whether, in this instance, his efforts will have at all contributed to this end, even if he should procure professional readers who will be content with such sketchy pathology and therapeutics, and general ones who will not find too much medical description and detail to deter them from going over its pages connectedly and in an inquiring spirit.

Watson's Lectures on the Principles and Practice of Physic.*

Our favourable estimate of the value of Dr. Watson's Lectures, is already on record in the pages of the Bulletin, and needs no enforcement.—Dr. Condie's additions, in the form of notes, increase, as might have been inferred, the value of the present volume, without immediately augmenting its already large size. In his desire for compression, however, we sometimes miss the desired fulness and distinctness of features of the disease, and their changes of expression in its successive stages, to say nothing of the different forms in which it may make its appearance. Thus, for example, in the editor's long note on Bilious Remittent Fever, the reader is not as distinctly apprized as he ought to be of the great variety in the organs on which the disease seems to spend its force, and from whose functional disturbances the prominent symptoms are derived. Still more meagre and unsatisfactory is the notice of congestive fever, of which a very inadequate idea would be formed from Dr. Condie's brief summary. For the purposes of instruction to students and younger practitioners a reference, at least, might have been made to the admirable descriptions of congestive fever by European writers, under the title of malignant and pernicious intermittents, and

the outline of the treatment recommended by them which has proved in our own country to be the most successful. The popularity of Stokes' and Bell's Lectures among physicians in the south and west, is, we have good reason to believe, in a great measure attributable, as far at least, as regards the additions of the latter in the first edition, to the full and comprehensive views presented on this subject.

A passing allusion to these Lectures, embodying as they do, a larger amount of information deduced from the observations and practice of writers on congestive fever, in all parts of the world, than is to be found in any other work, would not have been out of place, even in the note of our friend the editor. We would take the liberty just now, of refreshing his memory by directing his attention to Lect. CXXIX. by Dr. Bell, p. 409—14, Vol. II.

In his notes to the Lecture on dysentery, Dr. Condie has failed to supply the omission of Dr. Watson, to point out the not infrequent complication of lesions of the liver and small intestines with inflammation of the large intestines. The American editor's summary of the treatment of the disease presents the peculiarity, more novel than entirely commendable, of not mentioning the word calomel in his enumeration of the articles of the *Materia Medica*, which he believes to constitute the best curative course. Whoever has suffered from sporadic dysentery with tenesmus and discharges of blood and mucus, and has taken from five to ten grains of calomel, will remember with gratitude the relief afforded in the course of a few hours by the discharge of scybala and bilious feces, which is often the prelude to a speedy restoration to health, after venesection and demulcents and common laxatives had been employed with but little relief.

Objections may be validly made to the somewhat too sweeping recommendation of bloodletting in dysen-

* Second American from second London edition, revised with additions, by Dr. Francis Condie, M.D., Secretary of the College of Physicians, Author of a *Treatise on the Diseases of Children*, &c., &c., Philadelphia, Lea and Blanchard, 1845, pp. 1060.

tery, by Dr. Condie. In our common sporadic dysentery, and even in some of its epidemic visitations, in our limestone regions during the great heats of summer, this remedy is often indispensable; but in autumnal and camp dysentery there is far from being so pressing a call for it. Its use under these circumstances ought, indeed, not seldom to be dispensed with entirely.

The erroneous view of the anatomical seat of croup, held by Dr. Watson in common with nearly all English physicians, has been, in degree, corrected by Dr. Condie, in a note, but neither here nor even in his own work on *The Diseases of Children*, to which he very properly refers his readers for further information respecting the pathology of croup, is its laryngeal seat and origin so distinctly affirmed and sustained by so large a body of evidence as by Dr. Bell. (*Bell and Stokes's Lectures*, p. 49-52, Vol. II., 3d Edit.) We are not aware that this view of the subject has been so prominently and fully enforced in other quarters.

We are the more free to point out these omissions of our friend, the editor of Dr. Watson's Lectures, and perhaps feel a little malicious pleasure in doing so, considering his well known bibliographical lore, and pains-taking enumeration, in other cases, of works less directly in his way than our own tomes, whose size cannot well be overlooked, whatever estimate may be formed of their scope and spirit.

It would be, we conceive, hypercriticism, to indicate the blanks left by Dr. Watson, which remain yet to be filled up by his editor; as this is a compound question, in which the literary contributor is not always the party who has free choice in the matter. We may, however, express some surprise that the present edition was not further enriched by outlines of the pathology and treatment of so important a disease as Cholera Infantum, and one, also, "more particularly interesting to the American physician." But with so much before us we can patiently wait for the appearance of that which is

withheld, and which in due season will doubtless be brought out in a new edition of the Lectures.

Thomson's Domestic Management of the Sick Room.*

When a gentleman of Dr. A. T. Thomson's attainments and position gives his attention to minor matters, we must suppose, not only that he does it in a becoming spirit, but, also, that good effects must result. Something of the kind as the work now before us was wanted; and we are afraid that we must add, is still wanted; for, in too many instances, the author has gone aside and beyond the limits required by the subjects. The general reader, friend or nurse, as the case may be, of the patient, by whom its pages were meant to be penned, soon finds that he must take counsel from others more learned than himself, for a ready understanding of descriptions and precepts. Less medicine and more hygiene, and altogether a more careful restriction to the necessities and proprieties of a sick room, including the physical wants of the patient and the ethics that ought to regulate the visits and deportment of all those who enter it, would have pleased us better. We regret, on this account, to observe that the American editor who is quite competent to carry out either mode of treating the subject, seems to have forgotten that the volume was intended for the use and benefit of the community at large; and hence he has made nearly all his notes and references as if to assist the medical inquiries of the strictly professional reader.

But, while thus hinting our objections to the general execution of his task, we must at the same time admit that Dr. Thomson has brought toge-

* The Domestic Management of the Sick Room, necessary, in aid of the Medical Treatment, for the cure of Diseases, by Anthony Todd Thomson, M.D., F.L.S., Fellow of the Royal College of Physicians, &c., &c. First American, from the second London edition, revised with additions, by R. E. Griffith, M.D., &c., Philadelphia, Lea & Blanchard, 1845, pp. 353, 12mo.

ther a considerable body of useful directions, which will prove of especial value to heads of families, and to all those who are liable to have their services often or long put in requisition for nursing invalid relatives or friends. To young physicians who are desirous of indoctrinating the proper parties in these matters, this volume will furnish the requisite materials whence to draw their dicta.

Ramsbotham's Obstetric Medicine and Surgery.*

This second and extended edition of Dr. Ramsbotham's *Principles and Practice of Obstetric Medicine and Surgery* cannot fail to secure and increase the suffrages given in favour of the first. A comprehensive treatise on Midwifery with nearly one hundred and fifty lithographic engravings, exhibiting the pelvis and its component parts, the organs in this cavity, and the measurements in its different axes, those of the foetal head, views of the uterus and its appendages both in its natural and impregnated state, and finally of the various positions of the child anterior to and in the progress of delivery, and of the modes of relief by the hand and by instruments, possesses manifest and manifold attractions to the real student and practitioner of this branch of the art. Restricting himself to midwifery proper, to the exclusion of speculations on menstruation, conception, and of details of the diseases of pregnancy, the author has contrived to give his reader a large and coherent body of practical directions and deductions, for his guidance during the several stages of parturition and in the difficulties of all kinds that at times interfere with its regularity and due completion.

We deem it unnecessary to analyze

* The Principles and Practice of Obstetric Medicine and Surgery, in reference to the process of Parturition. Illustrated by one hundred and forty-eight figures, by Francis H. Ramsbotham, M.D., lecturer on Obstetric and Forensic Medicine, &c., &c. A new edition from the enlarged and revised London edition. Philadelphia, Lea & Blanchard, 1845, pp. 519, royal 8vo.

this work or to give selections in proof of its merits; but we cannot omit to point out the chapters on Complex Labours, in which the subject of uterine hemorrhages, as connected with or dependent on placental deviations, ruptures and adhesions, is treated in a way calculated to give much needful instruction and reasonable confidence to the young and inexperienced practitioner. We like much the author's eclectic; which does not mean, as some seem to understand by eclectic, vacillating and timid views of peritonitis, without, however, our being fully persuaded that peritonitis after labour and puerperal fevers are convertible terms. The division into two varieties which he points out, viz., the sporadic or insulated, and the epidemic, the latter alone being contagious, is, we fear, sometimes forgotten in discussions on and even in the treatment of this disease.

RANKING'S HALF YEARLY ABSTRACT OF THE MEDICAL SCIENCES, No. I., pp. 371, 8vo.—A vast amount of valuable matter, relating to the progress of the several departments of Medicine and its collateral branches, similar to that found monthly in our own Journal, is furnished by Mr. Ranking in this volume, the like of which will appear every six months.—We have shown our appreciation of its merits by copious extracts in our present number.

Our Library.

We may, without incurring the imputation of undue self-complacency, remind our readers of the intrinsic merit of the works issued in the Select Medical Library, for the year 1845. *Christison's* unrivalled *Treatise on Poisons* was followed by *Colles's Lectures on Surgery*, and, with the present number of the Bulletin, will be sent out in the Library for October, the classic work *Heberden's Commentaries*. Unless disappointed in the reception of the second volume of Latham's *Lectures on Subjects Connected with Clinical Medicine*, we shall most probably open the next year (1846), with a republication, in the Library, of this valuable work, which is so much altered and improved by important additions, that it cannot fail to be favourably received even by our old scholars who have on their shelves a Library copy of the first edition.

THE
BULLETIN OF MEDICAL SCIENCE.

VOL. III.]

Philadelphia, November, 1845.

[No. 11.]

Vegetable Organography.

ACADEMY OF SCIENCES—AUGUST 4.

M. GAUDICHAUD read a memoir intended to refute the theories advanced by M. Mirbel in his memoir on the *Dracæna Australis*. The following is a summary of the principal general facts stated by M. Gaudichaud—facts which tend to establish a new phytological doctrine.

M. Gaudichaud first established, by numerous anatomical preparations, the fact, already admitted almost universally by botanists, that all vascular vegetables, monocotyledonous and dicotyledonous, augment the diameter of their trunk by the annual or incessant addition of radical filaments which arise in the buds, and descend more or less directly and rapidly to the extremity of the roots. Those filaments are moved by a powerful force, which acts throughout the entire length of the vegetable,—a force which is exerted from the organic summits towards the base—in other words, from the buds to the roots. He demonstrated moreover, that, after having destroyed every source from whence the ligneous filaments have been said to arise, the various phytons originate, decussate, and carry on their functions isolatedly in whatever way they are united, and that once they are engendered, each lives in virtue of its own special life, without borrowing any organic matter from the vegetable which only serves it, so to speak, as earth, into which it may send its roots. He shows, in fact, that those phytons are developed at once in all their parts, as distinct individual beings.

VOL. III.—31

M. Gaudichaud maintains, then, that a vegetable is not an individual, as is generally thought, but an assemblage of individuals, uniform in their primitive nature, as variable in their organization as in their functions, all born in succession, and exerting a mutual agency on each other by the effect of a double development, one central and ascending, the other external and descending. They individually discharge two functions—one, for their own proper life, the other, for the general vitality of the compound vegetable.

M. Lassaigne communicated the result of new researches instituted to determine the quantities of salivary and of mucous fluid absorbed by the aliment in the mouth of the horse and of the sheep during mastication.

In previous communications respecting the mastication and the deglutition of corn, M. Lassaigne had shown that the starch contained in grains of corn is not disaggregated by the molar teeth of the horse, and consequently that during this first act the saliva cannot exert any chemical action on it. The same results were obtained on repeating the experiment on sheep. M. Lassaigne embraced the opportunity afforded to him by those experiments to examine the quantity of mucous and salivary fluids excreted during mastication, and absorbed by the alimentary bolus to fit it for deglutition. By isolating and dividing transversely a portion of the cesophagus, the alimentary bolus was easily obtained during its passage to, and before its entrance into, the stomach. The proportion of water, in each alimentary substance experi-

mented with having been determined by preliminary experiments, the quantity of saliva and of mucus was estimated by determining the quantity of water obtained in the alimentary bolus by dessiccation at 100 C. (212 F.) and ascertaining the proportional quantity of the fixed saline principles present, which are known to be contained in the saliva of the horse and of the sheep.

From the results thus obtained, the proportion of the aliment to the salivary and mucous fluids is in the horse,—for barley meal 1000 to 1890,—for oats, 1000 to 1129,—for the leaves and stems of green barley, 1000 to 481; and in the sheep those proportions for the same substances are 100 to 2125,—1000 to 973, 1000 to 393.

INFLUENCE OF THE MUSCLES OF THE EYE ON VISION.

August 11.—Dr. Frestel communicated a note on some points relative to vision. M. de Haldat, in a recent memoir on the same subject, relying on physical experiments, endeavoured to prove that the muscles of the eye exert no influence on vision. Dr. Frestel combats this opinion by clinical facts. The globe of the eye is surrounded and maintained in the orbit by fibrous, fatty, and other structures, its form is spheroidal, and its antero-posterior greater than its transverse diameter. When freed from those textures and from the fibrous capsule which surrounds it, it tends to assume the spheroidal form, and consequently to diminish its antero-posterior, and increase its transverse diameter. If the globe of the eye is laterally compressed at two opposite points, the distance that separates the centre of the cornea from the opposite point of the sclerotic is increased at the expense of its transverse diameter. Dr. Frestel founds the explanation of myopia and of presbyopia on the possibility of elongating the antero-posterior diameter of the globe of the eye, by compressing it laterally, and by its natural tendency to approach the spheroidal form when it ceases to be thus compressed.

The facts cited by Dr. Frestel, from clinical observation in support of his views, tend to prove the influence of the dispositions in question on the range of vision. Thus in paralysis of the motor oculi nerve, the eye is long-sighted, and the presbyopia diminishes as the disease progresses towards cure. In five patients affected with paralysis of the common motor oculi nerve, and in which double convex lenses were worn, the presbyopia disappeared despite

the persistence of the dilatation of the iris, as it was not on this latter condition that the long-sightedness depended.

Myopia is sometimes replaced by presbyopia during serious maladies. Dr. Frestel has observed patients affected with pulmonary tubercles wear double concave glasses of a high number on their admission to hospital; but as the disease advanced, and their muscular power diminished, they used glasses of a lower power.

As a consequence of those views, Dr. Frestel suggests that good effects should follow graduated pressure on the eye continued during a certain time, and thinks that in myopia, with slight ex-ophthalmia, section of the four recti muscles may be indicated. — *Dub. Med. Press.*

ON THE TREATMENT OF NEURALGIA BY IODINE.

Under this title, Mr. Clarke, of Pimlico, in a recent number of the *Lancet*, relates the particulars of a severe case of neuralgia of the fifth nerve, which was cured by the iodide of potassium. The patient, a female, aged 25, after exposure to cold five years previously, was attacked with pain in right side of face, which was relieved by treatment, but soon returned, and with increased severity; the right tonsil ulcerated, and poured out a constant and very fetid discharge. When seen first by Mr. Clarke, the jaw was completely closed, and remained so for many hours; there was swelling, with great tenderness, about the right ear, extending to the shoulder and across the face, in the direction of the branches of the trifacial nerve. The supra-orbital pain was very severe, with indistinct vision of the right eye; the tonsil was nearly destroyed by ulceration. Her general health was very bad; she was emaciated and pallid, with great nervous excitement and depression of spirits.

After the application of a few leeches she was ordered a combination of blue-pill and compound extract of colocynth, with a mixture containing rhubarb, carbonate of soda, and peppermint water. When the local symptoms were subdued, the iodide of potassium was commenced in three grain doses, three times a day, with bicarbonate of potash and camphor mixture, the bowels being regulated by blue-pill and rhubarb, with aromatics, enjoining a light nutritious diet. After a short time, she began to improve in her general health, and to gain flesh. The dose of the iodide was gradually increased to sixteen grains three times

a day, and the compound infusion of gentian was substituted for the camphor mixture. The iodine was occasionally intermitted; and quinine with iron given in the intervals; nothing was applied to the tonsils; the discharge diminished, and finally ceased, and at the end of five months she was perfectly restored to health. Three years have since elapsed, and she has remained well, with the exception of an attack of dysmenorrhœa and ovaritis, brought on by anxiety of mind.

MEDICAL WITCHCRAFT.

We copy the following from an English provincial paper, if for nothing else, to show the inconsistency of newspaper writers: one day, blazoning forth the feats of mesmerists, hydropaths, and homœopaths; the next, discoursing scholarly and wisely about the ignorance and superstition of rustic professors of medical witchcraft.

"SUPERSTITION IN THE 19TH CENTURY.

—In the back settlements of the parish of Margaret Roothing, a young man, who lives with his mother, had been for some time grievously afflicted with intermittent fever and ague; physicians had visited him in vain, he still remained ill, until a cunning woman was consulted, who resides between Epping Forest and Ongar, and the charmer's prescription runs as follows:—'That a small nut should be cut in twain, the kernel extracted, and a live spider placed in the shell, which was to be sewn up in a bag and worn round his neck, and as the spider wasted, so would the fever leave him.' The charm was procured, the patient positively wore it, and as 'the whole matter was in a nut-shell,' of course he soon recovered, and (says our correspondent) is able to undertake his harvest.

We should have thought such ignorance could not have found a resting place in the darkest nook in Essex, but our correspondent assures us, in solemn phrase, he is not cracking a joke upon the nut-shell."—*Chelmsford Chron.*

Now, the writer of the above would be greatly astonished, and perhaps offended, if told that this statement is probably true, and still more surprised if informed that in this consists the whole secret of the homœopaths, hydropaths, mesmerists, and other medical swindlers. It cannot be denied that powerful impressions made upon the mind, especially if that mind be naturally weak, or enfeebled by neglect, mismanagement, or debauchery, remove

certain conditions of the animal economy, producing distressing symptoms, which we call disease; and this very interruption or diversion of the paroxysm of intermittent fever is a signal instance of it. Few, we believe, will deny that the fit of ague has been prevented by powerful impressions, made either on the mind or body, inducing some other state of the system or particular organ. But we are not at all familiar with the fact, that the healthy operations of the animal economy may be either rendered more active or suspended by mental emotions? Nausea, even to vomiting, is induced by disgusting descriptions, offensive odours, and nauseous or frightful sights. The peristaltic action of the intestines, and consequent diarrhœa, was produced by the terrors of cholera in numberless instances; and glands secrete profusely under the influence of internal emotion or external impressions. Tears flow from grief, saliva from appetite for food, urine from fear, and bile from rage. The heart beats quickly and violently, and the capillaries become turgid to blushing, or its action is almost suspended, and the surface becomes cold and pale from the influence of the passions and mental disturbance. Muscles are paralyzed, erectile structures distended, and the skin becomes shrunk and withered, from similar causes. But it is unnecessary to multiply examples; every informed medical man is familiar with them, and we only repeat them here with the hope of instructing those who cause much mischief from their ignorance of such matters. But if the healthy and natural functions of organs are thus influenced, why not those variations of function which constitute what we call disease? If the alimentary canal, the circulating, respiratory, biliary, or urinary organs act feebly or imperfectly from anxiety, ill-temper, groundless apprehensions, or other depressing emotions or feelings, may we not hope to correct such a state by exciting hopes of improvement, infusing confidence in remedies, and dissipating fears? The man above alluded to had a regular paroxysm of intermitting fever, occurring at the usual period, more from a habit established in his frame than from the influence of any existing organic disease, and this habit was broken or diverted by the train of thought or hope of recovery induced by the spider in the nut-shell, just as the dyspeptic valetudinarian is diverted from his complaints, real or imaginary, by the drop or powder of the wonder-working homœopath. This, however, is not the only

foundation of the system of the medical cheat. He has two other facts upon which he relies. Most diseases disappear in time as they run their natural course, or they are caused and continued by indulgence of appetites, want of bodily exertion, and other bad habits. To gain time for the spontaneous cure of the disease, the homœopath claims a long trial for his infinitesimal doses, and "at the same time" slyly alters the diet, habits, and mode of life of the patient. All this, however, is effected by the basest practices, and the most disagreeable subterfuges. Falsehood, deception, imposition, and grimace, are his weapons, and cheating is the object to which he devotes himself. The old woman who furnishes the spider in the nut to cure the ague is sincere, she believes in the virtue of her remedy, and may be an honest woman. The quack laughs in his sleeve at the credulity of his victim, knows his remedy is a humbug, and is necessarily a rogue. But what then? Is he the worse because he is a rogue? Not at all. He is a smart man, and goes a-head, and rogues in other lines admire his dexterity. Besides, he makes small-talk for young ladies, and speculation for old ones; enacts lion for the vulgar, and spaniel for the gentle; and taken altogether, has become a necessary member of society as it is. — *Dublin Medical Press.*

ON THE TREATMENT OF DISEASES OF THE MIDDLE AND INTERNAL EAR.

(Translated from the French by Dr. JOHNSTON.)

The following paper was read before the Royal Academy of Sciences at Paris, by Dr. Wolff, of Berlin, on the 6th of January, 1845:—

The most recent advance in otiatrics is, beyond a doubt, indicated by the introduction of aerial substances, instead of liquid injections, into the Eustachian tube. M. Deleau was the first to whom this improvement may be attributed. It was he who first demonstrated the inconvenience of liquid vehicles and the advantage of aerial substances, which, from their gaseous condition, are analogous to the air which circulates in the middle ear, and from that very circumstance, much better suited for introduction into the cavity of the tympanum.

But, on the other hand, it must not

be forgotten, that aqueous injections have certain advantages over the douche of air—advantages which seem to have been entirely lost sight of by the majority of aurists since aqueous injections have been replaced by the air-douche.

Water is the principal vehicle for almost all medical substances. In nature as in art, it is the fluidem solvens of the greater part of them. By means of aqueous injections, then, many remedies can be introduced into the middle ear. Thus, Itard injected Barège water, saline and aromatic solutions.

The air-douche of M. Deleau, at present almost exclusively used in place of aqueous injections, has scarcely been used at all as a vehicle for medical substances. M. Hubert Valleroux, alone, has recently recommended the injection, by a caoutchouc bottle, of atmospheric air, charged with particles of any resinous or balsamic substances—substances which are volatilised when exposed to a moderate heat, and often, indeed, adapted to catarrh of the middle ear, but certainly not suited to all diseases of that organ.

Medical substances which are only volatilized at a high degree of heat cannot be introduced into the Eustachian tube by the method of M. H. Valleroux, yet the majority of the remedies which might be employed in the diseases of the ear are in that predicament.

Medicated air, recommended by that author, does not, then, completely fill up the void caused in the treatment of the diseases of the ear by the abandonment of liquid injections for the air-douche. They merely constitute an isolated remedy in an isolated disease (like acetic ether, which is volatilized at 15° Reaumur, and which was used by Itard.) But the question is—to discover a method by which all sorts of medicines may be introduced into the middle and internal ear.

Long before M. Valleroux, I had endeavored to make use of some such principle, employing watery vehicle for more struck me, that forms the principal soluble matter in the gaseous state. There was a vehicle in which I could introduce aqueous solutions of medicines.

advantage—namely, the high temperature (219° Fahrenheit, 80° Reaumur) required to boil water.

One may imagine that such hot vapours brought into contact with the Eustachian tube must be injurious; and when it was attempted to cool them, by making them pass through tubes, or into a much lower temperature, they were immediately condensed into liquid water. This has caused the failure of all attempts hitherto made.

What I then wanted was to invent an apparatus by which I could procure aqueous vapours of a proper temperature (not too high), and for a suitable time (not too short.) I think I have discovered one, and I submit it here for the consideration of the Royal Academy of Sciences.

I shall explain in few words its construction and action.

Water contained in an ordinary tin vessel, and heated by a spirit lamp, boils. The vapours rise by a pipe into a second vase, much larger than the first, and containing a third vase, filled with cold water in such a manner that the hot vapours which rise from the first vase are made to pass over this cold water, and then out by a small pipe at the edge of the lid of the large steam-vase.

By this very simple mode I have succeeded in procuring aqueous vapours at the temperature I desired, and hence I have the power of introducing the most different medical substances into the middle ear.

If it be required to introduce simple aqueous vapours, or a solution of any medicine, as, for instance, a solution of a narcotic extract, it suffices, as already said, to pour water, or the solution, into the first vessel, and very cold water into the third. If required to introduce acetic ether, or any other substance which vapourises, at a temperature much below that of water, I pour that substance into the third vase. The aqueous vapours, on passing over the liquid, become impregnated with the vapours of the ether, at the same time that they are much more cooled than if they passed over simple fresh water. If it be necessary to employ balsamic or resinous aqueous vapours, as gum Benzoin, I place the Benzoin, well pulverized, in a small vessel, to be placed in the large steam-vase, and the aqueous vapours become also loaded with the volatile particles of that substance.

In this way I have employed the most different substances in different diseases of the ear with various success.

If the different medicines require modifi-

31*

cation in the mode of evaporation, the method of introducing the vapours into the tube and middle ear, varies according to the state of the tube.

If the two Eustachian tubes be perfectly free, and permeable to the current of air, as in nervous deafness, I do not think it necessary to introduce the vapours by a catheter, for inasmuch as the atmospheric air enters and passes out freely by the tube, aqueous vapours brought near to its orifice should equally penetrate into the canal. Consequently, in these cases, I have replaced catheterism by the introduction of a caoutchouc canula sufficiently large, which is thrust into the inferior nasal canal for two or three inches, whilst the end of the canula projecting outwardly from the nostril is joined to the pipe of the apparatus generating the aqueous vapours. The method is very simple, causing neither pain nor tickling, and requires no experience of such operations. Any surgeon, or even patient, may use it, whilst catheterism of the tube can only be performed by a skilful aurist.

It is obvious, then, that, from this circumstance, the treatment of many diseases of the ear becomes generalized. Instead of some few aurists in the capital cities, all physicians and surgeons may subject the deaf to a local treatment in their own vicinity. The inhabitants of the country, with those of great cities, the poor and the rich, may derive equal advantage from it. However, the diagnosis of the disease must ever precede the treatment, and it (the diagnosis) demands always the exploration of the middle ear by the sound. Catheterism of the Eustachian tube remains, then, the chief means of diagnosis in diseases of the internal and middle ear, and remains, also, indicated as a therapeutic means in all diseases of the middle ear, causing a material obstacle to the passage of air, as in catarrhal obstructions of the tube, contraction or obliteration of this canal. Like other aurists, then, I exercise catheterism, and venture here to submit to the Royal Academy three new methods of performing that operation.

In this short extract I put aside the third method, because it only serves to facilitate the operation upon persons (as we sometimes meet them) who will not permit the introduction of the ordinary catheter at all, but as the other methods are preferable to it in every other respect, I only employ it rarely, and do not think it of much value.

The two other methods, on the contrary,

appear to me preferable to all the others hitherto in use. We may mention that all these methods may be reduced to two, each of which has certain advantages over the other — i. e., catheterism, by means of solid silver catheters, (of Itard, Kramer, &c.) and catheterism, by means of elastic and flexible catheters, (of M. Deleau.)

Inflexible solid catheters have the advantage of greater safety in the execution of the operation, which is not owing, as commonly believed, to the solidity of the instrument, but to its caliber, and, above all, to that of its beak. For as it is much larger, it is felt to be well grasped by the orifice of the tube, whilst the thin elastic catheter of Deleau is not grasped by the orifice, and does not give such a sure intimation to the operator that he has reached that canal. But the advantage of the elastic catheters of M. Deleau over the solid ones of Kramer is still greater. It consists in the possibility of entering more deeply into the tube than that which is retained in the orifice, whilst the elastic thin catheter can traverse the greater part of the canal, (three-fourths, according to M. Deleau.)

I have attempted to unite those two chief advantages in the two methods I have now the honour of submitting to the Royal Academy. They only differ in the material of the catheters. The catheters, in the first method, are of silver, those of the second, elastic. Both are double, consisting in an interior catheter of a caliber as great as that of Kramer, and an interior one as small, and even smaller, in caliber than that of Deleau. The exterior catheter is of the ordinary length of those used for the ear (six inches); the internal catheter is two inches longer. The former are graduated along their whole length, the latter are only so at their lower end, which projects from the external catheter. The internal catheter, in the first method, is of pure, or almost pure silver, and hence, flexible, whilst the external one is of ordinary silver, — i. e., mixed with copper, and hence, inflexible. The internal catheter, of the second method, does not require to have a wire, because its passage is sufficiently secured by the outer catheter which contains it. It is obvious that this gives it an additional advantage over the catheter of M. Deleau. But the principal advantage of my catheter is, as I have already said, that it gives the same security in the execution of the operation as the large solid ones of M. Kramer, and that it goes quite as deep, and even deeper into the tube, than the thin elastic ca-

theter of M. Deleau. For whilst the external catheter is stopped by the orifice of the tube, the internal one goes deeper into that canal.

Each of these two methods has its advantages over the other, and consequently its indications. The double silver catheter is preferable for the exploration of the ear; it is safer, and permits of exploration directly by touch as well as by hearing. In contractions, or even obliterations of the tube, it is still more useful, as it may often be used to force a passage, whereas the elastic catheter cannot. But the elastic catheter on its side has the advantage over the inflexible silver one, that is much better borne by the patient. Above all, when the catheter is to be adapted to an apparatus cumbersome in transport as that of Mr. Deleau or mine for the production of vapours, and when the patient is obliged to remain some time in the same position, the elastic catheter is very useful. When using the caoutchouc bottle, one is as useful as the other.

My methods possess one more advantage over the others — viz., the facility of introducing the catheter by the opposite nostril. This operation, but rarely indicated in cases where the nasal canal of the corresponding side is too narrow to admit the passage of the catheter, cannot be performed at all with the catheters of Itard, or of Kramer, because their beaks are too short, and only with difficulty by Deleau's method, and by particular catheters with long beak, (8 — 10 lines.) The difficulty of the operation arises from the length of the beak of the catheter, since we know it cannot pass so easily as the ordinary catheter. Thus, my double catheters obviate this disadvantage entirely, for during the passage of the instrument through the nasal canal, the internal catheter remains within the external; the beak of the instrument is then as short as that of the ordinary catheters, and when it touches the Eustachian tube, it is turned to the inside, and then the internal catheter is thrust out of the external into the tube.

In the memoir I had the honour to submit to the Royal Academy, I have mentioned a case in which catheterism by the opposite nostril was necessary; that case corroborates what I have just said. The results obtained in the other cases I have mentioned cannot be given in few words, and therefore of referring to my memoir treated about two of this method, some

of which cases are mentioned in the memoir.

I have the honour to request of the Royal Academy of Sciences the nomination of a commission to judge upon the method here submitted.

A commission was then accordingly named, composed of MM. Roux, Velpeau, and Breschet. — *Lancet*.

THE ABSTINENT PLAN OF TREATMENT IN CASES OF GANGRENE.

To the Editor of the Lancet.

Sir—I read with much interest in the *Lancet*, some time ago, a report of the trial, "*BAKER vs. LOWE*," involving, as it did, a subject hitherto not much attended to by the profession. I allude to the use of, or abstinence from, stimulants in the practice of medicine. By some, the conflicting testimony in the trial was viewed as a humiliating exhibition of the character and state of the profession. By others, however, it is regarded as a sign of a great revolution, already commenced, in opinion and practice.

Without entering fully into the subject, I would yet offer a few remarks, which, perchance, may excite among your correspondents interesting and important reflections. It will readily be admitted that the preponderance of evidence in the case alluded to was greatly in favour of the abstinent plan; and although the statement of the witnesses had special reference to the treatment of senile gangrene, yet it cannot be difficult to concede that, in other diseases, similar circumstances will justify a more extended application of the same remarks.

In the absence of a fuller report, I use the abstract contained at the time in the *Lancet*, and if in my comments I should seem to express opinions at variance, sir, with the tenor of your editorial remarks, be assured that that arises simply from my desire for the elicitation of truth. It appears, then, that an old man was attacked with gangrene of the toe, and that the case was treated, unsuccessfully, by stimulants and amputation. Another surgeon was called in. An alteration, "an improved method of treatment," took place, the gangrene ceased to extend, and amputation was then successfully performed. In due course, the surgeon originally called in presented his bill of charges, and this became referred to a court of justice. The evidence adduced principally related to the mode of treatment. For the plaintiff, Messrs. Bransby Cooper, Partridge, Perry, and, nominally, Mr. Liston, were arranged as witnesses. For the defendant, appeared Messrs. Lawrence, Aston Key, and Skey. In the former case, the evidence was so excessively qualified, and so jealously guarded by conditions, that, in my humble opinion, it served rather to perplex than assist in the formation of an opinion on the subject. On the other side, the testimony was

at once decided, intelligible, and, I would add, conclusive. Mr. Liston's position, on the side of the plaintiff, I have called nominal, only; for while he honorably avoided any expression of censure on his late colleague, his evidence appeared in the most perfect harmony with that of the defendant's witnesses. With regard to the verdict, I would remark that a man is entitled to remuneration for his services when they are dictated by generally acknowledged doctrines.

To me, sir, the subject of abstinence from stimuli appears now to be fairly before the profession, at least, as regards the treatment of gangrene. After reading this account of successful treatment, who that has witnessed the invariably fatal termination of such cases treated on the ordinary plan, can avoid reflecting upon the possible result had other treatment been adopted? How, otherwise, are the abortive attempts of nature at a separation, witnessed in protracted cases, to be accounted for than by the interference of the treatment? Surely, now that men of eminence have declared for the new plan, it will meet with more attention. In medicine, many opinions which were formerly held to be true, are now acknowledged to be erroneous, and cast aside. This species of advancement of our science, I would venture to say, has not yet reached its full extent. If some cases recover, either with or without stimulants, it is plain that stimulants are not indispensable. Cases presenting extreme depression have been raised without the slightest use of stimulants, which, in other hands, would have been considered to be essentially requisite. But it is impossible to convince by argument alone. One trial is worth a hundred arguments, and I would submit that no person is in a position to judge, unless he has made trial of both plans. It may be pretty safely affirmed that they who once institute a fair trial of the abstinent plan have little hesitation in giving it universal preference.

I am, sir, yours, respectfully,
W. CLULEY, M.R.C.S.

ON THE NATURE OF THE GREEN ALVINE EVACUATIONS OF CHILDREN.

By GOLDING BIRD, A.M., M.D.
Fellow of the Royal College of Physicians, and Assistant-Physician to Guy's Hospital.

Whilst the attention of the practitioner has been constantly drawn to the frequent occurrence of bright-green dejections in the ailments of infants, but little has been done towards determining their real nature and chemical composition; there being, so far as I know, but one analysis recorded of these productions. I have repeatedly examined these green evacuations with the view of testing the accuracy of the popular

opinion of their being chiefly composed of bile, but never made a minute examination of any until a few weeks ago, when my attention was particularly directed to the subject by my friend Dr. Forbes, who placed in my hands one of the best specimens of a green evacuation that I ever saw. It was passed by a hydrocephalic infant whilst under the influence of mercury, and presented the following characters. It was a dirty-green turbid fluid, which, by repose in a glass vessel, separated into three very distinct portions—1, a supernatant fluid, of oil-like consistence, presenting a brilliant emerald-green colour; 2, a dense stratum of mucus, coagulated albumen, and epithelial debris, mixed with red particles of blood; 3, a deposit, occupying the lower part of the vessel, of large crystals of triple phosphate of magnesia and ammonia, in fine prisms of an apple-green colour.

The supernatant emerald-green fluid was decanted for examination.

A. It was faintly alkaline, possessed a broth-like colour, and a density of 10·20.

B. The addition of a few drops of nitric acid did not alter the colour, even after ebullition. A larger quantity of the acid being added whilst the mixture was boiling, converted the emerald-green colour into a pinkish yellow; the green colour was not restored by the subsequent addition of an alkali.

C. Acetic acid scarcely affected the green fluid, producing no apparent coagulation of mucus.

D. A solution of acetate of lead threw down a copious greyish-green tenacious precipitate, leaving the supernatant fluid colourless.

E. Bichloride of mercury produced a light-green precipitate, leaving the supernatant fluid pale, but not decolouring it.

Analysis.

1. 1000 grains of the green fluid left, by careful evaporation, a deep olive-green, highly deliquescent, extract, weighing 100 grains.

2. This extract (1) being immersed in alcohol of 0·837, formed a mass like bird-lime, which could not be mixed with the spirit. Even after long boiling, it appeared hardly to diminish in bulk.

The clear tincture being decanted, left, however, an extract weighing 30 grains. This residue possessed the yellowish-green colour of faded leaves, an odour of fresh broth, and a sweet sub-astringent taste, with a very slight admixture of bitterness.

3. The alcoholic extract being carefully incinerated, left 5·5 grains of ashes, consisting chiefly of chloride of sodium mixed with mere traces of tribasic phosphate of soda ($3\text{NaO}, \text{P}_2\text{O}_5$). It was alkaline, but did not effervesce with acids.

4. The portion left undissolved by boiling alcohol yielded to water 13 grains of nearly tasteless matter, which, by incineration, left a powerfully alkaline ash, weighing 1·75 grains, not effervescing with ashes, and consisting nearly exclusively of alkaline tribasic phosphate of soda.

5. The residue, insoluble both in water and alcohol, weighed 57 grains, and consisted almost entirely of coagulated albumen, dry mucus, and modified blood. It left by incineration 1 grain only of ashes, consisting almost wholly of brick-red sesquioxide of iron.

The following is a view of the results of the examination:—

| | |
|---------------------------|--------------------|
| Alcoholic Extract | { Organic . 24·50 |
| | { Inorganic . 5·50 |
| Aqueous Extract | { Organic . 11·25 |
| | { Inorganic . 1·75 |
| Insoluble matter | { Organic . 56·00 |
| | { Inorganic . 1·00 |
| Water and volatile matter | . . . 900. |

1000

Regarding the chemical constitution of the organic portion of the alcoholic and aqueous extracts; the former consisted chiefly of fatty matter, cholesterine, and a green substance, probably identical with the so-called *biliverdin*,* with mere traces of bile, barely sufficient to communicate a bitter taste to the extract, and in too small a quantity to leave any carbonate of soda in the residue of incineration. The aqueous extract consisted chiefly of ptyalin, and the extractive matters comprehended under the general term of "extrait de viande" by Berzelius. The composition of the fluid part of the green evacuation may therefore be thus expressed:—

| | |
|--|-------------|
| <i>Biliverdin</i> , alcoholic extractive, fat, cholesterine, with traces of bile | . . . 24·5 |
| Ptyalin, aqueous extractive coloured by <i>biliverdin</i> | . . . 11·25 |
| Mucus, coagulated albumen and hæmatosine | . . . 56·0 |
| Chloride of sodium, with traces of tribasic phosphate of soda | . . . 5·5 |
| Tribasic phosphate of soda | . . . 1·75 |
| Sesquioxide of iron | . . . 1·0 |
| Water | . . . 900 |

1000

* *Medizinisch-Analytische Chemie*, von Dr. J. J. Berzelius: Bd. I., s. 333.

An analysis of a green calomel evacuation has been recorded by Simon.* He has not given the proportion of solids and water present, but merely detailed the composition of the dry extract which consisted of

| | | |
|--------------------------------------|--|-------|
| Soluble in Alcohol | { Bile, bilifellie acid, biliverdin . . . 21.4 Fat, containing cho- lesterine . . . 10.0 Alcoholic extractive 11.0 } | 42.4 |
| | | |
| | | |
| | | |
| Ptyalin, aqueous extractive . . . | | 24.30 |
| Albumen, mucus, epithelial cells . . | | 17.10 |
| Saline matter | | 12.90 |
| | | 96.7 |
| | Loss | 3.3 |
| | | 100. |

Some late researches on the nature of the green stools said to be of frequent occurrence in patients who are under a course of the Marienbad and Carlsbad waters, have been published by Professor Kerstin, of Freiberg.† He has altogether denied that any quantity of bile is present in the green evacuations, and has attributed their tint to the presence of green sulphuret of iron, generated in the stomach and intestines by the reduction of the sulphate of soda present in the water, to a sulphuret, and its subsequent action on the iron existing in the springs alluded to. He states, in accordance with this view, that hydrochloric acid destroys the green colour of the stools, evolving abundance of sulphuretted hydrogen. In this character there is an essential difference between the green evacuations of the Marienbad patients and of those under the influence of mercury. The conclusions arrived at by Professor Kerstin have been flatly contradicted by Dr. Frankl, of Marienbad,‡ who attributes the colour of the evacuations to the "same source" as the greenish tint of some mucous discharge from the vagina in leucorrhœa, the urethra in gonorrhœa, and the nasal secretions in some forms of coryza.

That bile may, and often must, be present in large quantity in the fecal dejections in disease, is certain; but that it is necessarily present in the green evacuations so common in early infancy, and under the influence of mercury, may be questioned. In Simon's analysis a large quantity of bile was found, but in the specimen examined by myself but mere traces were detected. If any quantity of this secretion really existed, the alcoholic extract must have tasted bitter, and the ash must have contained an alkaline carbonate, as from the sparing solubility of phosphate of soda ($\text{HO}, 2\text{NaO}, \text{P}_2\text{O}_5$) in alcohol, there could not have been sufficient of this salt present to unite with the soda

of the bile to form during ignition the alkaline phosphate ($3\text{NaO}, \text{P}_2\text{O}_5$).

I have assumed that the green colour of the matter examined was owing to *biliverdin*, a conventional term for a substance very imperfectly understood, and very likely applied to substances essentially distinct in their nature. Berzelius has compared biliverdin to the chlorophyll, or green-colouring matter of leaves, although this must be regarded as partaking rather of a wax-like nature than as a mere coloured extractive. It must, however, be borne in mind that green colouring matter may be possibly generated in the animal economy from the action of certain matters on the hæmatosine, or colouring matter of blood. Thus, it is well known that when blood is exposed to the influence of sulphuretted hydrogen gas, it acquires a deep-olive green colour when viewed by reflected, and a dingy red by transmitted light—phenomena identical with those presented by the colouring matter of bile. Attention has been drawn to this remarkable fact by Professor Leopold Gmelin.‡ It is now ten years ago since a series of researches on the action of oxydating agents upon blood were published in the pages of this journal, by Dr. Brett and myself. In that paper we described two products of the action of nitric acid upon clot of blood,—an olive-green sweetish astringent substance, and an intensely bitter yellow one; we applied the conventional term of chloro-hæmatin to the former, and xantho-hæmatin to the latter.

Since, then, the colouring matter of blood is fully capable of being converted into green pigments under the influence of different agents, it must, I think, be admitted, that we are not to assume the green colour of an animal excretion as of necessity depending upon the presence of an excess of bile. And when chemical analysis fails to indicate the presence of any quantity of this secretion in a bright green evacuation, it is but legitimate to seek for some other cause of this tint. The proportions of the so-called biliverdin very closely approach to those of the xantho-hæmatin before alluded to, and I confess that I am induced to regard the green colour of the emerald and "chopped spinach" stools of children as depending upon the presence of modified blood, rather than on an excess of bile.

Believing that the green stools alluded to are but a form of melæna, I have often closely questioned the nurses of children voiding them, regarding the appearance of the evacuations before and after the development of the green colour, and have almost constantly been told

* Philosophical Magazine, June 1845. I have here pointed out the nature of the change alluded to above.

† Recherches sur la Digestion. Tiedemann and Gmelin, p. 19.

‡ Medical Gazette, Vol. xvi. p. 751. Aug. 1835.

* Simon, *supra*, citat. Bd. II. s. 496.

† Heller's Archiv. für Physiologische Chemie. 1844. S. 273.

‡ Heller's Archiv. 1845. S. 105.

that streaks, or even clots of blood, had been observed.

I regard, then, the presence of green stools as indicative not of a copious secretion of bile, but of a congested state of the portal system, in which blood is exuded very slowly, and in small quantities, so as to allow of the colour being affected by the gases and secretions present in the intestines; a state of things capable of readily ending in mælena, in which the effusion of blood is so copious and sudden as not to give time for the occurrence of the changes alluded to.

There is, moreover, a peculiarity in the green dejections of children and others whose portal circulation is congested, which, so far as I know, is quite distinct from any property presented by mere bile under similar circumstances;—I allude to the effect of exposure to the oxygenating influence of the air upon them. When first voided the "chopped spinach" stools are in the majority of cases of a bright orange colour, and they assume their characteristic grass-green hue only after exposure to air. The time required for this change varies remarkably. I have seen an orange-coloured stool become green in a few minutes; and in the same patient, only a day or two afterwards, many hours may have been required to affect the same change.

CASE OF TETANUS, IN WHICH RECOVERY TOOK PLACE.

The subject of this case, (which is recorded by Dr. Patrick Newbigging, of Edinburgh) was a baker, æt. 28. About a week before the day on which he first complained, he had occasion to go into the open air to chop wood, while in a state of profuse perspiration, at a season when the cold was very intense. In the evening he complained of stiffness about the angles of the jaw, which gradually increased until the fourth day, when the jaw became almost completely fixed or locked. When Dr. N. saw him, on the seventh day, the masseter and temporal muscles, as well as muscles of the back, were extremely rigid, and paroxysms of spasm of the muscles of the face and abdomen occurred about every half hour, lasting nearly a couple of minutes. The tetanic symptoms had continued, but latterly with considerable abatement, for about a fortnight, when the patient was suddenly seized with great difficulty of breathing, and general tremor,

accompanied with lividity of the face and lips, which, however, was speedily removed by placing him in the erect posture.

Five days after this the spasms returned, as also the attacks of breathlessness. The different symptoms, however, were gradually disappearing; but there was still considerable difficulty in opening the mouth. A month after the commencement of his attack he expectorated a considerable quantity of matter mixed with mucus, and occasionally to such an extent as to cause symptoms of suffocation, owing, in all probability, to the contraction of the muscles of the jaw, thereby causing obstruction to the discharge of pus. The expectoration of matter continued for about three weeks and then subsided. It was afterwards proved that he inclined his head much forward, and, upon examining the back of the neck, considerable thickening was found on both sides of the spinous processes of the vertebræ, unaccompanied, however, with pain on pressure. As the general symptoms progressively improved, anasarca appeared, and the limbs became swollen to a very considerable extent; but this was removed by the use of diuretics; and, with the exception of a slight inclination of the head forward, and some stiffness of the jaw, which did not admit of the mouth being fully opened, he got quite well, and was able to return to his business; the duration of the case having been upwards of three months. The treatment, in the earlier stages of the disease, consisted in small bleedings, the administration of croton oil and elaterium, until the obstinate constipation was overcome. Morphia, in doses of from fifty to seventy drops, was given, at first, in the evening, afterwards four times a day: to this were several times added thirty drops of the tincture of Indian hemp. Blisters were applied successfully to the upper and lower parts of the spine: a tobacco enema was once administered; and on the sixth day arsenic was prescribed. Colchicum was also among the remedies employed. Dr. N. conceives the successful issue of the treatment to have resulted from the persevering use of croton oil and opium, and attributes little of the benefit to the other remedies. He has occasionally observed benefit from the Indian hemp in allaying irritation and causing sleep, particularly when opium was contra-indicated, but is doubtful of the value of this remedy in tetanus. Dr. N. considers it probable that the complaint was produced by some degree of inflammation at the upper part of the spine, as indicated by the thickening felt externally; and that this was followed by the formation of matter which escaped internally and was expectorated. He does not believe that the bones or articular apparatus were diseased, as the motions of the cervical vertebræ were perfectly normal.—*Abridged from Northern Journal of Med.*

In October last, Mr. James Miller, of Edin-

burgh, treated with success a case of traumatic tetanus; the subject of which was a girl, æt. seven, who, about a fortnight before, had received a severe contused and lacerated wound of the middle finger of the right hand. The symptoms of muscular spasm and rigidity continued, although latterly with great abatement, for rather more than a month:—recovery was complete. Mr Miller says, that “the symptoms, at first severe, gradually, yet very perceptibly gave way before the treatment employed. The trismus, opisthotonos, and rigidity of the upper extremities, as well as of the abdominal muscles, were at first great, and underwent frequent and cruel exacerbation, and these aggravations were induced by the slightest exciting cause. Rigidity gradually relaxed; and the exacerbations became less painful, less frequent, and less easily induced. During a temporary interruption of the treatment the symptoms threatened to return to their original severity, and again yielded to the resumption of the appropriate remedial means.” Mr. M. proceeds to remark:—“For some time I have been satisfied that in the treatment of traumatic tetanus the most likely means of relief are to be found,—1st. In early amputation of the injured part, or isolation of it from the general nervous system by suitable incision on the cardiac aspect. 2d. In effectual and early evacuation of the bowels, and maintenance of free movement in them. 3d. In maintaining a sedative effect on the nervous centre implicated in the disease by cold applied to the spine. 4th. In the continued use of some one remedy calculated to allay muscular spasm, perhaps aconite, Indian hemp, or tobacco. 5th. In careful administration of nourishment, so as to husband the strength as much as possible. 6th. In maintaining quietude, and avoiding all excitement likely to induce aggravation of the spasm.” In pursuance of this system, the injured finger was amputated on the day after slight spasmodic symptoms had appeared. The bowels were acted upon by brisk purgatives and enemata of turpentine and assafoetida. Tincture of Cannabis Indica was given from the commencement of the disease, at first in doses of ten drops every four hours. (A drachm being equal to three grains of the extract.) On the following day the dose was increased to twenty drops every two hours, and in the evening to thirty drops every hour. On the third day thirty drops were ordered every half hour. On the fourth the dose was again ordered to be given every hour. On the following day it was doubted whether the tincture was genuine, as but moderate narcotism had been induced, and she was ordered two drops of the strong tincture of aconite every two hours. In the meantime one dose (thirty drops) of the Indian hemp was given to a middle-aged adult in the adjoining ward, an inmate on account of neurosis of the fibula. “The medicine was given at bedtime, and he speedily fell into a sort of trance, during part of which he fancied himself trans-

ported, not inappropriately, to Constantinople.” As it was found at the next visit that the spasmodic attacks had become both more frequent and more severe, it was decided to give up the aconite and return to the cannabis, giving thirty drops every hour. From this time the narcotic appears to have been continued in these doses for ten days, when it was reduced to thirty drops every second hour. In ten days after this the same dose was given every third hour. The hemp was continued, at increased intervals, a few days longer until all spasms had ceased, (although some hardness of the abdominal muscles remained,) it having been employed but with one day’s intermission for about a month, and was now beginning to induce a quick and irritable state of the circulation. Mr. Miller felt very hopeful of ice applied to the spine as a remedial agent, considering its action to be obviously sedative to the nervous system,—powerfully and directly so. As soon as circumstances permitted, it was had recourse to in this case, and was maintained in almost constant operation for ten days, the bags of ice being laid along the whole spine, but with the chief effect directed on the upper part. When the symptoms began to yield the ice was discontinued. The fifth indication of cure was never lost sight of. From the first very strong beef-tea was ordered to be frequently administered. As the trismus yielded, and the power of swallowing was regained, ordinary food was offered in addition, and usually taken with greediness. Mr. Miller attributes to the Cannabis Indica, the power—which, he thinks, is probably not slight—of controlling inordinate muscular spasm, and directs attention to the marked tolerance of this remedy in tetanus. This valuable case deserves to be carefully perused in the original.”—*Lon. and Edin. Monthly Journ.*, Jan., 1845.

CASE OF PURPURA HÆMORRHAGICA SUCCESSFULLY TREATED BY LEAD.

By JOHN HOOG, Esq. M.E.C.S.E. & M.D. Edin.

April 21st. — Miss —, aged forty-eight, unmarried, of ordinary conformation and temperament, took cold April 10th, accompanied by relaxed sore throat and slight cough. April 18th, petechiæ, small, but numerous, appeared first on the legs, then on the arms, body, and face, but caused no inconvenience. To-day, considerable quantities of blood proceeding from the nose, gums, fauces, and throat; the throat internally is relaxed and swollen, several large ecchymoses covering the soft palate and uvula, evidently distended with blood; the mouth and lips, as well as the whole surface of the

body, are now covered with purple spots; the blood flows constantly from the nose and mouth, not less than half a pint having been thus lost within the last twenty-four hours, independent of saliva. Bowels regular; pulse 72, rather feeble. Catamenia have ceased three years. Take disulphate of quinine, a grain and a half; dilute sulphuric acid, half a drachm; infusion of orange peel, ten drachms; make a draught, to be taken every four hours. Take alum, one drachm; water, six ounces; dissolve, and make a gargle, to be used frequently; to keep a recumbent posture, and have generous diet.

22d. — The tongue covered with raised ecchymoses; hemorrhage somewhat increased; bowels open. Continue medicine and diet.

23d. — Hemorrhage increasing, as also the spots in colour and size; sleepless night, from the constant epistaxis; pulse 84, feeble. Omit the quinine draught. Take carbonate of soda, one scruple; nitrate of potash, five grains; lemon water, ten drachms; to be taken as an effervescing draught every four hours, with tartaric acid, one scruple, in solution. Repeat the gargle; diet to be somewhat reduced. To drink copiously of lemonade, and oranges to be eaten.

24th. — Symptoms all aggravated. Hemorrhage from the nose, mouth, and throat, excessive; ecchymoses in the mouth, on the gums, and especially on the soft palate, very large, one as large as a shilling; the blood congeals about the gums, teeth, and fauces, and also flows perpetually; the spots increased over the whole body, especially on the face; much apprehension of suffocation. The strength is quite prostrated; appetite entirely gone, and great difficulty in swallowing even fluids; pulse 112, very weak; bowels opened by an aperient taken last night, evacuations consisting chiefly of blood; urine remains clear, but is dark coloured; breath very offensive. Continue gargle; omit the effervescing draught. Take acetate of lead, three grains; acetate of morphia, half a grain; vinegar, one drachm; distilled water, ten drachms; make a draught, to be taken at bed-time. Repeat the draught, without morphia, every four hours. Let her take three drachms of castor oil in the

morning. To take as much beef-tea as possible, and to continue the oranges and lemonade.

25th, ten A.M. — Hemorrhage unabated; face much swollen, and livid; body covered with large blotches, apparently from deep-seated ecchymoses; tunica conjunctiva of right eye occupied by ecchymoses; strength still further reduced; pulse 120, small and weak. The oil could not be swallowed, but in lieu of it, calomel, two grains; compound tragacanth powder, eight grains; was taken in jelly, at six A.M. No action from this. The oil was now taken with great difficulty. Continue the acetate of lead draught. — Eight P.M. Frequent disposition to vomit, when blood and mucus were thrown off, the patient being greatly exhausted by the effort; pulse 120, very weak; bowels opened four times by the oil, evacuations more than half blood; urine still clear, but high coloured. Has taken three cups of beef-tea to-day, and as much lemonade. Take spirit of turpentine, twenty drops; gum mixture and juniper-water, of each half an ounce. Make a draught, to be taken immediately. — Ten P.M. The turpentine produced violent vomiting, with great loss of blood in all directions. Repeat the lead draught and the morphia at bed-time.

26th, ten A.M. — Some sleep, from the night draught, and feels refreshed; hemorrhage somewhat abated; pulse under 100; appearance improved, and spirits better; mouth and fauces still loaded with coagula, one ecchymosis, as large as a half-crown, occupies the whole of the soft palate and uvula; bowels acted once, sparingly. Continue the draught, with four grains of acetate of lead in each; to push the beef-tea and lemonade as far as possible; to have lemon ice *ad libitum*. — Eight P.M. Symptoms much the same: slight catamenial appearance; has lost, since commencement of attack, nearly five pints of blood. Continue the lead draught.

27th, ten A.M. — But little sleep last night, much exhausted to-day; hemorrhage nearly ceased; pulse 112, feeble; bowels not open, though the oil was taken early this morning. Repeat the castor oil, and omit the lead draught. To take only beef-tea and lemonade. — Seven P.M. Bowels not moved; pulse 120, very feeble; has taken four cups of beef-tea to-day; hemorrhage continues, but very slight; spots fading; some fulness over region of the liver, and a little pain under right shoulder. Take simple infusion of roses, ten

drachms; tartaric acid and sugar, of each a scruple; make a draught to be taken every three or four hours, repeat the castor oil every six hours until the bowels are moved. Take at night ten grains of mercury, with chalk, in powder.

28th, ten A.M.—Slept at intervals; bowels opened freely; evacuations jet-black, chiefly blood; hemorrhage ceased, except slightly, from the nose, and in expectoration; feels somewhat refreshed, but still much exhausted; pulse 112, small and weak. Takes beef-tea, toast-water, lemonade, and ice, at discretion. Continue the draught and diet.—Seven P.M. Symptoms much the same, but some restlessness; pulse 120, rather fuller; an hour's sleep this afternoon. Continue the acid draught, and mercury with chalk powder, at bedtime, and also the anodyne draught, if necessary; omit beef-tea.

29th, eleven A.M.—Bad night; anodyne draught taken; much thirst and restlessness to-day; pulse 96, rather full; bowels not opened; tongue clearer; some large clots of blood expectorated; skin hot. Continue the acid draught. To have mutton-broth and sago.

30th, eleven A.M.—Much drowsy sleep last night; complains of headache and tinnitus aurium; some intolerance of light, but pupil contracts well; skin becoming clear; pulse 112, rather full; bowels opened twice from the oil; evacuations more natural, but still very dark. Take an effervescing draught every two or three hours; omit the broth. To take lemonade, arrow-root, and iced water, *ad libitum*.

May 1st, eleven A.M.—Epistaxis returned at three A.M., and continued till eleven A.M., by which nearly a pint of blood was lost; bowels opened this morning; evacuations contained very little blood; pulse 104, weak; great exhaustion; torpor relieved, but tinnitus aurium very distressing; much tingling and pricking sensation in the hands and feet; frequent cough, from irritation about the fauces; some nausea and occasional vomiting. Take of diluted sulphuric acid, half a drachm; sugar, half a drachm; lemon-water, ten drachms; mix, for a draught to be taken every two or three hours. To have a cup of beef-tea. Great depression of spirits, and apprehension of sudden dissolution.—Seven P.M. Much distressed by spasmodic cough, which is nearly incessant; epistaxis continues, though both nostrils plugged with coagulum; breathing laborious; frequent vomiting; much disturbance of sensorium;

tinnitus aurium very distressing; pulse 112, rather full. Bleeding from the arm to three ounces. Continue the acid draught; spirit lotion to be applied to the temples; strong mustard poultices to the soles of the feet.

2d, ten A.M.—Some refreshing sleep last night; pulse 104, softer; bowels not opened; urine high-coloured and scanty; tongue clean; blood drawn formed one glue-like mass, translucent, and very firm, being washed repeatedly in water without separating; crassamentum appeared deficient of colouring matter; no deficiency of albumen; no cupping. Take of ammoniated citrate of iron, three grains; disulphate of quinine, a quarter of a grain; water, one ounce: make a draught to be taken every four hours. Continue lemonade and beef-tea.—Nine P.M. Has had some refreshing sleep; some moisture of skin for first time; feels better; pulse 104, soft; cough rather troublesome; swallows better; head less disturbed. Continue the iron draught, and castor-oil at bedtime.

3d, eleven A.M.—Some refreshing sleep last night; tinnitus aurium continues; pulse 104, weak, but soft; tongue clean; bowels open; some blood in evacuations. Continue the iron draught. To have lemonade; broth, with vegetables boiled in it, and a few heads of asparagus.—Nine P.M. Took six or eight heads of asparagus, a cup of mutton broth, and six strawberries, this afternoon. At eight P.M. epistaxis returned slightly, with tinnitus aurium; pulse 100, soft, and fuller. Take compound infusion of roses one ounce and a half; Epsom salts, one drachm; diluted sulphuric acid, twenty-five minims: make a draught to be taken early to-morrow morning. Continue the iron draught in the morning. Rose draught, spirit lotion to temples, and sinapisms, to be repeated in the night if any return of epistaxis or giddiness.

4th, one A.M.—Profuse hemoptysis, with perpetual and distressing cough; the blood expectorated apparently arterial, but thin and watery; several coagula expectorated, one weighing more than an ounce; difficult respiration, and great prostration of strength; some headache, and much tinnitus aurium; feels momentary apprehension of dissolution; pulse 120, full and soft. Bleeding from the arm to three ounces immediately, and sinapisms to be applied to the feet, chest, and throat. Let her have the rose and Epsom salts draught, as prescribed before.—Five A.M. Hemoptysis and cough ceased on the venesection

and sinapisms being employed; unable to swallow her medicine, unable to articulate, but expresses herself as if quite exhausted, and anxious to be released from her sufferings. — Eleven A.M. Has had some disturbed sleep; no return of hemoptysis; recovered faculty of speech; abandoning all hope of living, and anxious only respecting her spiritual affairs, gave various directions as to her funeral. The blood drawn one mass of glue-like fibrin; pulse 100, weak and small. Continue the rose draught and broth. — Nine P.M. Breathing and articulation much improved; but cough still troublesome; tinnitus aurium very distressing; pulse 90, soft; urine high coloured; skin hot, but nearly free from spots. Continue the rose draught; apply a weak sinapism to the chest. Take three drachms of castor oil in the morning.

May 5th, ten A.M. — Passed a tolerable night; cough much relieved by the mustard poultice; pulse 94, soft; bowels not open; urine high coloured; skin hot and dry. Repeat the castor oil. Take compound infusion of roses, one ounce and a half; diluted sulphuric acid, twenty minims. Make a draught, to be taken every four hours. To have broth and lemonade at discretion. Nine P.M. — Bowels freely moved; evacuations very dark. Took to-day some broth, asparagus, and grapes; feels better; pulse 94, soft; no palpitation or irregular action of heart. Repeat the acid draught, and sinapisms to the chest.

6th, eleven A.M. — Passed a tolerable night; much relief, as to the cough, from the mustard poultice; some fulness over the region of the liver, and tenderness on pressure; pulse 90, soft; tinnitus aurium rather less. Continue the acid draught. Take calomel and sugar, of each one grain. Mix, for a powder; one to be taken every morning and evening. To have broth at discretion.

7th, eleven A.M. — Has passed a sleepless night, but without much cough; feels tolerably well, notwithstanding the bad night; tinnitus aurium and pains less; some perspiration on hands; bowels not open; pulse 90. Repeat the oil immediately. Continue the other medicines. To have calf's-foot jelly. Seven P.M. — Bowels freely moved; much dark-coloured bile voided; feels very weak; has had no sleep for thirty-six hours; pulse 100, full, and irritable; cough nearly gone; pains in body and limbs again troublesome; skin hot; urine natural. Continue all the medicines and diet.

8th, eleven A.M. — Slept well, and feels better in every respect; evacuations loaded with dark-coloured bile; pulse 86, natural; countenance natural; tongue clean; tinnitus aurium nearly gone. Continue the medicines and diet.

9th. — Passed a tolerable night; pulse 86; some cough. Omit the powder, repeat the draught, and continue diet.

10th, eleven A.M. — Slept well; cough still troublesome, (was always subject to cough of spasmodic character;) bowels open, natural; pulse 82, soft. Continue the draught and diet. Seven, P.M. — Continues to improve; cough assumes an asthmatic form; pulse 88. Continue the draught and castor oil in the morning. Apply a compound pitch plaster to the chest.

11th. — Slept well; cough less; some slight epistaxis on blowing the nose. Continue the medicine and diet.

12th and 13th. — Gradually improving, but debility very great; still unable to swallow solids.

14th. — Removed from bed to sofa for first time; nervous contraction at throat. Take disulphate of quinine, half a grain; compound infusion of roses, ten drachms; diluted sulphuric acid, twenty minims. Mix, for a draught, to be taken three times a day.

25th. — Left her room, walking steadily. Convalescent.

Remarks. — The mystery which overhangs this disease was not materially lessened by the observations made in this case. Although it is supposed to originate in passive hemorrhage, in debility of the venous system, or capillaries, the blood itself appears greatly deteriorated, and this may possibly be the first origin of the mischief. From the commencement of the attack not less than a gallon of blood was lost, and yet the abstraction of blood from the arm was called for by an overloaded state of vessels at the time it was employed. Whether venesection gave relief in this manner, or by the removal of a noxious vitiated fluid from the system, it is difficult to say, but that relief was afforded by the operation is certain.

From closely watching the phenomena of the disease, it further appears that a congested state of the liver is concerned in it, and on this ground the exhibition of alteratives, as recommended by Willan and Bateman, was attended with decided advantage. The general treatment was directed, in reference to the symptoms, in

the absence of correct data as to the cause of the disease. I am not aware of lead having been employed before, but from its effects in this case I should say it deserved to be ranked amongst the most valuable of remedies; about two scruples of it were taken without any symptom of colic, or other inconvenience supervening, if we except the tinnitus aurium, and the partial and temporary loss of the powers of articulation, which were probably attributable to its influence.

Dr. Watson saw the patient twice, and it was at his suggestion that the first bleeding was had recourse to.

On the whole, it appears a disease of debility, aggravated by derangement of the liver, and requires the ordinary counter-acting remedies for its cure. — *Lancet*.

ON THE USE OF ERGOT OF RYE IN PURPURA HÆMORRHAGICA AND SOME OTHER DISEASES.

By A. Ross, M. D., M. R. C. S. E.,
Boulogne-sur-mer, late Physician to the Suffolk
General Hospital.

I HAVE read with much interest, in the last number of *THE LANCET*, (July 19,) the case of purpura so carefully reported by Mr. Hogg. I am not, however, quite clear as to the share of merit due to the lead in effecting the cure; nay, it appears to me, that though one of the symptoms — viz., the petechiæ, began to disappear on the day on which the lead was discontinued, after three days' use, many of the most serious symptoms — the hæmorrhage from different parts of the mucous membrane, and the great constitutional disturbance, assumed a more aggravated degree after this period of the disease, and only yielded by slow steps to the various means so judiciously employed.

The report of the case extends from the 21st of April to the 25th of May; the lead was used from the 24th till the 27th of April; and on the 4th of May the prognosis was, as appears to me, still very unfavourable. I think, therefore, there is room to doubt the correctness of setting down the case as one successfully treated by lead.

Nothing can be further from my intention than to imply any doubt as to the propriety of the treatment, which must be allowed to have been most judicious, and to evince much readiness of resource in a case where

the symptoms continued so urgent for so long a period. My only object is to avail myself of this opportunity of pointing out to the profession a remedy which I have found to be most energetic in a case similar to the one reported by Mr. Hogg, and which was doubtless a most obstinate one.

I was asked, in the spring of 1840, by Mr. Stutter, at that period the zealous house-surgeon of the Suffolk General Hospital, to see, as a matter of curiosity, a young man who had just been admitted under the care of my colleague, Dr. Jackson. I forget whether Dr. Jackson had then seen him or prescribed for him, but finding him labouring under purpura, with hæmorrhage from different organs, accompanied with such prostration as led us to fear that a fatal termination to the disease was not distant, I suggested, provided Dr. Jackson should approve of it, the trial of the ergot of rye, which it struck me might be usefully combined with compound infusion of roses. The use of this combination was immediately commenced, and continued for some days, in the dose, as far as I remember, of five grains of the powdered ergot, and an ounce of the compound infusion of roses, every four hours, with a generous diet. Under this treatment, with the addition of some aperient when necessary, the case went on with great rapidity to a favourable termination, without a single untoward symptom occurring to interrupt its progress.

The effects of the treatment were so decidedly beneficial in this case, apparently so unfavourable, that Mr. Stutter was anxious, I remember, that it should be communicated at the time to *THE LANCET*. However, I considered then that it might be considered premature, and am only now induced to make the communication, from my attention having been recalled to the subject by Mr. Hogg's severe case.

Several years' experience of the effects of the ergot in certain stages of labour, leaves no doubt in my mind of the value of this medicine in obstetric practice.

I have also found it a valuable remedy, combined or not with infusion of roses, in menorrhagia, and in controlling sanguineous discharge from the uterus after abortion.

I have no doubt, if my idea of the value of the ergot as a remedy in purpura should be confirmed by further trial, that it might be found useful also in sea scurvy, and other passive hæmorrhage, depending on a peculiar and vitiated state of the blood. — *Lancet*.

ON NITRIC ACID IN DISEASES DEPENDENT
ON A MORBID CONDITION OF THE
BLOOD-VESSELS.

By J. SEBASTIAN WILKINSON, Esq. Surgeon, London.

Much has formerly been said and written concerning nitric acid in the treatment of syphilis, and in those ulcers and eruptions supposed to have had a syphilitic origin. That mercury, in some shape or other, is the only sure remedy that an experienced surgeon would rely upon, in cases truly venereal, must, I think, at once be conceded. Yet, that diseases of a suspicious character have been cured by nitric acid, there is abundance of testimony on record, without having to adduce the result of my own experience.

The point to which I wish to call the attention of the profession is, that the virtues of nitric acid are but imperfectly understood, and that in it we have not only a most powerful and valuable tonic, but, I was going to say, almost a specific, in certain diseases kept up by vascular debility. I have no disposition to detract from the virtues of the various drugs and chemicals we so often make available in the treatment of disease; on the contrary, in the hands of a judicious practitioner, one whose genius can at once mark the symptoms as they arise, there is, perhaps, scarcely a simple drug in the *Pharmacopœia* that has not, in some degree, its curative or alleviating properties. Mercury, for instance, which is the sheet-anchor of the physician, would be little else than a deleterious and deadly poison, were it not for the vegetable and saline purgatives; to say nothing of opium, antimony, and other remedies, for which the materia medica and laboratory are so justly esteemed.

I was first led to the trial of nitric acid, as an internal medicine, by observing its effects when applied externally to ulcers and inflammatory surfaces, when the blood-vessels had undergone some morbid change. In varicose veins, if a piece of lunar caustic, the basis

being nitric acid, or nitric acid not too strong, be drawn along the distended vessel, it will penetrate the skin, and in three or four days the vein will be reduced in size, and the morbid inflammation and pain removed, or, at all events, considerably lessened. In varicose ulcers of the legs, where the surrounding parts are of a livid or bluish cast, a solution of nitrate of silver or nitric acid will often cause the vessels to shrink, assume a healthy condition, and ultimately disappear. Of course, if any mechanical obstruction, such as pregnancy, exist, or the valves above be diseased, these circumstances must be taken into account, and the cause, if possible, removed. If the liver and kidneys do not perform their office, these secretions must be attended to. The application of bandages is known materially to assist, when the patient can bear pressure. In caries of a tooth, if a drop of pure nitric acid be introduced into the hollow of it, the disease is immediately arrested, and the pain ceases. I have tried this repeatedly, and almost always with success; but much depends upon the state of the liver and intestinal canal at the time, which, if disordered, tends to keep up the morbid inflammation in the part.

The inference I drew from these observations was, that if nitric acid could be introduced into the system in sufficient quantity, in cases where the blood-vessels were in a debilitated or diseased state, so that the circulation might be in a manner saturated, and the extreme arterial and venous branches affected, similar results might be accomplished where a more general and constitutional disorder existed. The following is the first case I selected for trial:—

CASE 1.—E, D—, aged thirty-nine, carrying on the business of a coach-maker, in London Wall, in the City, was brought to me in the month of October, 1839, labouring under dropsy of the abdomen, with diseased liver. When he entered my room, he was supported by his friend Mr. Lester, who came with him. His countenance

was sallow and shrunken, his abdomen and legs swelled to an enormous size, the latter resembling in shape the limbs of an elephant. His scrotum hung half way down his thighs, and the skin of his penis was distended to the thickness of a man's arm. His pulse was small and weak, and beat not more than thirty strokes in a minute. His history was soon told. He had been a constant frequenter of a public house, had been ill about two years with diseased liver, and then dropsy had supervened about ten months before paying me his first visit. He had been under medical treatment, and taken mercury in small doses, with other remedies; but was now considered by his medical attendants as past cure, and unable, from his weak state, to undergo the operation of paracentesis. His bowels at this time were costive; he passed his urine in small quantities, not more than a table spoonful at a time. I ordered him six grains of calomel, and ten of colocynth, in three pills, to be taken at bed-time. I visited him at his own residence two days afterwards. He had passed two motions, both as black as, and of the consistence of, melted pitch. I desired him to repeat the dose, and saw him again in two days; he had passed three motions, the first two in colour and consistence as the last, but the third was more of a brownish cast, and looser. From his uneasy state and difficulty of breathing, in the presence of Mr. Hunt, apothecary to the Provident Dispensary, I passed a trocar below the umbilicus, and drew off a pail and a half of water. The fluid, on being placed in an iron spoon over a candle was found to be highly albuminous. I did not examine his urine. Took six grains of hyd. cum creta at night, a drachm of supertartrate of potass, with eight grains of jalap, on the following morning. The evacuation was watery, and contained yellow bile. This was repeated in four days with a similar result; pulse continued the same in frequency, but fuller. Ordered friction over the region of the liver with the palm of the hand three times a day, an hour at a time. I now determined to give the nitric acid, beginning with thirty drops of the dilute every four hours, in a glass of decoction of cinchona. This was increased ten drops per diem, till he took 250 daily, and continued it for two months. The dropsy had entirely disappeared, and his pulse risen to 90 in a minute, and full. The secretion of bile and urine had returned; he could eat a beef-steak for breakfast, and was ready for an-

other before his accustomed hour of dining, which was one o'clock. In less than six months, he was as fat and as well as ever he had been during his life. The most singular part of this case is, that my patient afterwards returned to his old habits of drinking, but, I believe, not to his former excess. I saw this person three years afterwards; he had no return of his complaint whatever. He took the nitric acid nearly three months. There is one thing here I wish to point out—viz., that in all cases of obstinate obstruction of the liver, a large dose of calomel must be given; small doses are worse than useless.

CASE 2.—Thomas P—, aged fifty-two, butler to Mrs. C—, of Montague-square, consulted me in the month of October, 1840, about a large tumour in the throat. The apothecary who attended him, told him that it was an enlarged tonsil gland. On making an examination, I found a large tumour, occupying the left side of the fauces, descending down the pharynx, but its extent in that direction could neither be seen nor felt. It ascended behind the bony palate, and continued its course along the roof of the mouth: below, it pressed down the tongue, and pushed the velum palati diagonally forwards as far as the teeth. On one side it was connected to the pharynx by a base as broad as the tumour itself, whilst the other surface came nearly in contact with the opposite side of the throat. The tonsil on the diseased side seemed involved in the disease, but whether it commenced in that gland, or lower down, does not appear, as he never suspected the existence of such a companion till it had assumed the frightful size of a turkey's egg. The mucous membrane covering the tumour was tense, and somewhat glistening, of a dullish-red colour. It had not the least doughy feel, but was semi-elastic in some parts, whilst other portions of the swelling had a firm, fleshy feel. His countenance was rather sallow, but from his general good health, I proposed the operation of removing it piecemeal by ligature, as it was evidently too vascular, and in too awkward a situation for the knife. His mistress had sent him to Mr. Lawrence, of Bartholomew's Hospital, who pronounced it malignant, and would not interfere with it. I then proposed that Mr. Liston should see him, when it was agreed to pass a bistoury straight into the tumour, and evacuate any fluid that it might contain. A small quantity of straw-coloured fluid was evacuated from a superficial puncture, but on the instru-

ment being continued further downwards, a rush of arterial blood took place, and he lost nearly a pint in less than two minutes. Cold vinegar and water, and syncope, fortunately put a stop to the hemorrhage, and I accompanied him home from the hospital in a coach. In a day or two he had a great deal of irritative fever, the lips of the wound opened, and an excrescence, having a yellowish-white cauliflower appearance, protruded. This kept on increasing in size for six weeks, was hard to the touch, and now of a magnitude between a shilling and a half-crown. His appetite entirely failed him, and he could scarcely swallow fluids of the consistence of arrow-root. The debility of body was now much increased, he had lost all his flesh, his countenance very sallow, and his features much attenuated. The glands of his neck on the side of the tumour formed a chain along the sternomastoid muscle, as hard as marbles; he was literally skin and bone. Mr. Liston and myself, who daily attended him, now thought that death would soon terminate his existence, and my friend took his final leave. Mr. Aston Key, of Guy's Hospital, was now sent for, and I met him. He pronounced it at once a fungus, that in all probability he had another in his liver, and that the patient would not live four days. Though all hopes seemed now at an end, I observed that he would constantly call for the nitric acid gargle which I had ordered him. I was therefore determined to give large doses of it internally, which I did every four hours, beginning with thirty drops, thrice a day, in a glass of water; increasing five drops each dose per diem. In less than a week the excrescence sloughed and came out; the nitric acid was continued, and he got rapidly well in six weeks. T. P. is still in his situation, in good health, and has been so ever since his recovery, four years and a half ago.

In justice to that well-known and accomplished surgeon, Mr. Liston, I must confess, that without that gentleman's operation the patient would in all probability long ago have been either choked or starved. Without the nitric acid, he would most inevitably have sunk.

CASE 3.—I was consulted, in the year 1839, by Mr. W——, an ironmonger, in Crawford-street, about thirty years of age, for an ulcer on the upper part of the ala of the nose. It was first observed about three years before, in the shape of a small pimple, which discharged a watery tumour. He had been under half a dozen surgeons, but

none of them could succeed in getting it to heal. I advised him to take five grains of Plummer's pill every night, and Hudson's syrup of sarsaparilla during the day, for a month. At the end of the first week I applied the lunar caustic, which I repeated at convenient intervals, which checked the discharge, and I was in hopes, when the black eschar had separated, that cicatrization would have been completed. I was, however, disappointed. A very thin skin certainly had come over it, but I saw it was soon to be absorbed, which was the case in a week afterwards. Its base being very hard, and his friends alarmed lest it should turn out cancerous, I proposed to dissect it out. The thoughts of the operation frightened him, and he went to Mr. C——, a well-known surgeon in the Borough, who advised him to continue what I had before prescribed, probably thinking I had not pushed the medicine far enough. This gentleman applied the caustic more freely; the result was, however, the same. When about six months had elapsed, he sent for me, and I removed the hardened base and ulcerated surface, which was a little larger than the section of a large pea. I had some difficulty in getting the wound to heal, the granulations being glassy, and ash coloured. A little diluted nitric acid was applied to the wound with a camel-hair brush, for four or five successive mornings. In a fortnight it assumed a more healthy appearance, and it was healed in a month after operation. It caused little or no scar, the part resembling a pit from the small-pox. It has never again returned. The patient took the nitric acid internally during the healing process.

CASE 4.—Mr. S——, aged sixty, a tobaccoist, an old inhabitant of the Edgeware-road, long subject to erysipelas, observed, in the month of September last, a small tumour on the middle of his right eyelid, of a dark-red colour. It increased in a month to the size of a horse-bean, when he pricked it with a needle, and says he lost about a gill of blood. The puncture soon increased in size; and an excrescence made its appearance, which had grown, by the middle of November, to the size of an old English strawberry. In this state I first saw it; he had then a poultice to his eye, which from its pressure and the tumour together on the globe, had produced considerable inflammation of the conjunctiva. As he was under medical treatment, I refused to interfere, but considered a poultice, from its weight, at all times a most

inapplicable thing for the eye. This was changed for something worse—namely, a zinc lotion, which produced considerable inflammation both of the eye and eyelid. As the surgeon thought an operation useless, believing it to be true carcinoma, I was consulted professionally. The tumour was hard to the touch, and easily bled, and profusely, considering its size: It was composed of one sac within another, so that when its surface appeared to be about to suppurate, it would come off, and the sac underneath make its appearance. The eyelid was swollen, of a dark-red colour, and could not be raised by the patient. On opening the eye, there was chemosis of the conjunctiva, the cornea sunken and dull, and two large patches of lymph thrown out. I ordered him a constant application of warm water, three grains of calomel, and a quarter of a grain of tartar emetic directly, with a black draught two hours afterwards. I saw him again at night, medicine had operated; put a blister behind his ear. He afterwards took small doses of blue pill for three or four days, and applied another blister. The inflammation had sufficiently subsided for the nitric acid and bark, which he took a week previous to the operation.

I performed the operation as follows:—The patient being seated in a chair opposite a window, I stood behind him, and he reclined the back of his head on my breast. Mr. Blizard Power, a student of Bartholomew's, who assisted me, stood in front, and fixed the prongs of a hook I use in the squinting operation just above the tarsus, and put the eyelid on the stretch. With a small scalpel, I made a circular incision around the base of the tumour, having only just room for the blade of the knife between it and the cartilage. It was very vascular, and I was obliged to pause more than once, that I might see my way clear. As the sac was incorporated into the lid, I took in a little skin with its circumference, and behind, a few of the fibres of the orbicularis palpebrarum. I got it clean out, but the hemorrhage, considering the small size of the tumour, was almost incredible. The patient lost more than half a pint of blood, and I had great difficulty in stopping it, as I could not use pressure in so delicate a situation, and it was desirable for the oozing to cease, as I dressed the wound simply with a piece of goldbeater's skin. My patient continued the nitric acid for a fortnight afterwards, and he got well in three weeks.

It would require the eye of a very acute person to see where this operation had been performed. There is not the least shortening of the lid, nor even stiffness in it. He says his sight is better than it has been for years, and I am sure his general health is, if a most excellent appetite is any criterion. I think it will be some time before he has another attack of erysipelas.

I make it a practice of giving the nitric acid and bark before and after operations for scirrhus breast, in chronic erysipelas, and immediately after the acute stage of that disease; in debility, after an attack of gout, and in most nervous diseases; in extreme old age I have found it increase the appetite, raise the spirits, and induce sleep, where opium and other narcotics have tended to keep up the disorder they were intended to remove. In valvular affections and enlargement of the heart by dilatation, I have found the most decided benefit, especially if the liver performs its office tolerably. Of course, in such cases as the last, a cure could not be expected or even looked for, and I have seen quite enough of digitalis to discard it *in toto*. If the nitric acid is taken for some time, it raises the pulse, renders it fuller, but deprives it of its wiry hardness. It does not destroy the teeth, like the other mineral acids, nor turn them black. I have never seen it produce salivation, but it will cause great redness of the mucous passages, the tongue, and fauces.

CASE OF BRIGHT'S DISEASE SIMULATING POISONING BY OPIUM.

[Read before the Queen's College Debating Society.
By JOHN MOORE, President. With Notes.]

THOMAS PRICE, pensioner, æt. thirty-nine, (of large muscular frame and sallow complexion); was admitted into Victoria Ward 1, at 6 P.M., July 29th, 1844, under Dr. Melson.

Symptoms.—Breathing laborious, at times stertorous: when not subject to excitation of some kind or other he remains in a state of stupor: on being roused he answers questions sensibly, but presents a stolid aspect; muscles, though large, flaccid; pupils of moderate size, answering imperfectly to light; conjunctivæ extremely pallid; pulse 94, of full volume, but weak;

occasional convulsive twitchings of the upper extremities.

The history of the case, partly detailed by the patient himself, and partly obtained from his wife, by Mr. Sharman (Dr. Melson's clinical clerk,) who visited Price as an out-patient, prior to his admission, is as follows, viz.: That having suffered for a few days from diarrhœa, he went to a druggist's on Saturday morning last, and asked for four pennyworth of tincture of rhubarb; that a large quantity was poured out of one bottle, into which a few drops of another liquid were dropped; he drank this dose in the shop; some pills were also given him, two of which were to be taken at bed-time. Immediately after taking the dose he became drowsy, and consequently, at the suggestion of a neighbour, returned to the shop, and asked the druggist's assistant who had served him whether he had given him laudanum? The young man told him that he had put in a few drops, on account of the severity of his symptoms. Upon again reaching home he fell asleep, and has continued sleeping, except when temporarily roused, until the present time: he vomited shortly after taking his draught, but the matter ejected had been thrown away. He has served in the West Indies, where he had a severe liver complaint, but has never had fits of any kind, neither is he aware of any hereditary tendency to them.

The patient was ordered a mustard emetic, to be taken directly; and to be kept in constant motion. The mustard did not excite vomiting, but passed away by the bowels within five minutes of its administration; hot strong coffee was now repeatedly given, and he appeared to improve considerably, resting occasionally, and talking over his old campaigns with the porter who had the charge of him. About 8 A.M., July 30th, he relapsed into a lethargic state: galvanism was employed with little benefit: he was now walked round the hospital-garden between two men, and drank occasionally of a strong

infusion of green tea, and again the tendency to stupor was diminished. At 2½ P.M. he once more relapsed; his countenance became more anxious, and his breathing more oppressed; his extremities were cold and clammy; he was nearly pulseless, and with great difficulty rendered conscious.

Æther was administered, ammonia applied to the nostrils, and galvanism employed with a beneficial effect.

So long as he was kept moving he could be made to answer questions put to him, but at three different times during the afternoon the disposition to somnolence was so extreme, that the means before employed were totally inefficient: cold water was dashed over the face and neck, followed by friction with hot flannel, with temporary benefit, but at 8 P.M. the soporific tendency had become almost insuperable; the pulse was 60 and feeble, the pupils but slightly contractile, the conjunctivæ pallid, and the stertor much augmented. He was now placed on a bed, and whilst Dr. Melson kept his finger over the radial artery at the left wrist, a vein was opened at the bend of the right elbow; the aperture made was small, and the blood flowed but slowly, but before four ounces had been removed Dr. Melson found that the pulse was rendered more frequent and thread-like: he therefore directed that the orifice should be closed.

The feet and legs were now covered with mustard cataplasms, and a blister applied over the nape of the neck and spine; ammonia and brandy were administered at intervals.

Though the mustard plasters were several times changed they caused but slight redness, and the blister produced scarcely any effect; the urgency of the symptoms rapidly increased, and he expired at 2½ P.M., July 31st, forty-four hours after his admission, and one hundred and two hours from the time of taking the supposed dose.

Examination of the body twenty-one hours after death. — General appearance of body :

No anasarca; no unusual tendency to putridity.

Cranium.—Meningeal vessels anteriorly empty, but posteriorly somewhat congested. Substance of brain of firm consistence, extremely pale, and exsanguine: no organic lesion perceptible.

Thorax.—Lungs much congested, and infiltrated with serum; heart generally hypertrophied, (weighing seventeen ounces); no valvular disease.

Abdomen.—The stomach contained about two ounces of yellow pulaceous matter; no smell of opium was perceptible. The mucous membrane was generally congested, and a space about 4 by 3 inches in extent (situate about midway between the cardiac and pyloric extremities of the great curvature) extensively infiltrated with black matter: there was no abrasion of the mucous membrane.

The small intestines were congested throughout, without however loss of epithelium, excepting in a portion of the ileum, about six inches in extent, terminating within an inch of the ilio-cæcal valve; this presented several spots of ulceration in different stages, but in no part was the gut perforated. The liver was large and congested; the gall-bladder contained but little bile.

The kidneys were both of small size. The right presented externally an irregular lobulated surface of a yellowish-gray colour, having, here and there, small stellate congested patches: when cut into it was found to be extremely dense and of granular texture; the cortical portion was the subject of extensive fibrinous deposit, which imparted to it a light yellowish-gray colour; the tubular structure generally was changed into a buff-coloured fatty substance of firm consistence; two or three of the coni, however, still retained their healthy appearance: small punctæ of earthy deposit were irregularly dispersed over the cut surfaces. The left kidney presented the same general characteristics, externally and internally, as did the right, but had in addition, lying beneath its peritoneal surface, two cysts (of about the size of horse beans) which possessed distinct membranous walls, and did not communicate with the pelvis of the kidney; both were filled with a yellowish brown albuminous looking fluid.

Pelvis.—The bladder contained about six ounces of urine of light colour, which was ascertained by the employment of the usual reagents, to be albuminous.

Analysis of contents of stomach.—No trace of opium was detectible in the contents of the stomach by the tests proposed by Christison.

Analysis of cerebral substance.—A portion of the brain (about two ounces in weight) was digested in spirit, and strained; the filtered spirit evaporated over a steam bath to dryness, the residuum dissolved in hot spirit evaporated to the consistence of syrup, and strained again; by the addition of nitric acid crystalline plates of nitrate of urea were obtained.*

Coroner's inquest.—At the Coroner's inquest the druggist's assistant stated, that he had given Price (the deceased) "four drachms of tincture of rhubarb, into which he had dropped *five drops of laudanum*, on account of the severity of the symptoms; and that the pills consisted of equal parts of aloes, scammony, ginger, soap, and syrup." My evidence was to the effect that the immediate cause of death was congestion of the lungs, which might have been produced by a poisonous dose of laudanum, but that the disease of the kidneys which was present would fully account for it, and that this latter cause was rendered more probable by the discovery of urea in the brain.†

* Urea was also obtained from the serum of the blood abstracted during life.

† Doubts have been raised as to the poisonous influence of urea, in consequence of its discovery by a German chemist in healthy calves' and healthy human blood. (See the *Lancet*, Oct. 19th, 1844.) It cannot be denied that urea is a constant constituent of healthy blood, since from that fluid the kidneys secrete it, but that its normal quantity is inappreciably small is indicated by the fact that Dr. Rees has written express directions for the mode of examining blood supposed to contain urea, (see Rees "On the Analysis of the Blood and Urine,") and that Becquerel and others have failed to detect it, even where symptoms have led to the belief of its presence. That, when existing in excess in the blood, urea acts injuriously, is evident, since it has been observed that "cerebral symptoms have borne a direct relation to the quantity of urea in the blood." (See Dr. Garrod, *Lancet*, Oct. 19th, 1844, and Bright's Hospital Reports), and that when injected into the veins, or administered as a poison, urea causes death (Cormack on the Fever of 1843). If the circulating fluid contain an excess of oxygen—upon

REMARKS.—On account of the occurrence of symptoms analogous to those of poisoning by opium immediately after the assumption of a dose in which laudanum was acknowledged to be present, and inasmuch as no tendency to disease likely to produce such symptoms was ascertainable, it was naturally concluded that a larger quantity of laudanum than was intended had been accidentally administered, but as the post-mortem examination tended to show that death was the result of natural causes, it may be well to analyse the symptoms, and to ascertain in what respects they warranted, or were opposed to, the diagnosis formed. First worthy of notice, we have,

The peculiar rousability of the patient.—Christison states that "the possibility of rousing the patient from the lethargy caused by opium is in general a good criterion for distinguishing the effects of this poison from apoplexy or epilepsy;" he further characterises it as "a safe guide when, as in many cases of poisoning by opium, the individual can be roused to a state of tolerably perfect consciousness."

The convulsive twitchings of the forearm.—Convulsions, though not usual, are sometimes present; cases in which they occurred are quoted by Christison, and Beck states that "where they are present, they are frequently of extreme violence."

The pulse was of full volume, but weak, and the breathing laborious; as the case progressed, the pulse became small and thread-like, and the breathing stertorous: such are their characters in a fatal case of poisoning by opium.

State of the pupils.—The effect of opium upon the iris has been found to vary much, though, in the majority of cases, it would seem that the pupils are contracted; here, however, at first, there was little remarkable in their appearance: towards the termination of the case, diminution of size and insusceptibility to light were well marked.

a due proportion of which it depends for its nutritive qualities—it ceases to be healthy blood, and becomes in fact poisonous; then is it not reasonable to conclude that a superfluous product would prove deleterious when existing in the blood in undue quantity, in consequence of the organs specially provided for the purpose of eliminating it from the system failing, through disease, to accomplish their appointed office?

Vomiting, which occurred on the morning that the suspicious dose was taken, is a symptom which frequently follows the assumption of a large dose of opium, yet, says Christison, "it may not interrupt the progress of the symptoms."

The remission of symptoms and subsequent relapse would have raised a doubt as to the nature of the case had no precedent existed; but Pyl has recorded a case in which vomiting occurred twelve hours after taking a large dose of opium; a remission of the patient's symptoms followed, but he again relapsed, and died on the tenth day. Christison, after quoting this case, writes, "The only way in which opium could cause death in such a manner, must be by calling forth some disposition to natural disease:" it will be remembered that it was in consequence of the patient suffering from diarrhoea that laudanum, in the case I have related, was given. Now, dysentery is mentioned by Christison as "lessening the susceptibility of the system to the effects of opium;" hence it was rendered probable that diarrhoea, continued for some days, might have so modified the action of the poison as to account for the prolongation of its deleterious effects.

The effects of remedies frequently invalidate or substantiate a diagnosis; in Price's case they had decidedly the latter tendency. The application of stimuli repeatedly produced a temporary sensibility, which, on the cessation of stimulation, was instantly succeeded by a recurrence of lethargy. A protracted remission followed the persevering exhibition of hot coffee, and green tea—both antidotes employed in cases of poisoning by opium. After his relapse, when the symptoms had become more urgent, still was the effect of excitation evident, though in a diminished ratio. The cold dash and galvanism were twice respectively used with manifest, but short-lived benefit; but eventually the patient sunk into a state of insensibility from which no remedial agent could rouse him. Such are the circumstances which characterise exactly a case of poisoning by opium.

Having now seen that none of the symptoms observed during life were directly opposed to, and that, viewed *en masse*, they served to corroborate the diagnosis, let us consider whether the post-mortem appearances are reconcilable with the conclusion that poisoning by opium was the cause of death.

The brain was remarkably exsanguine, and its meninges were only congested pos-

teriorly (this congestion being doubtless the result of cadaveric gravitation). It may be urged that the brain and its membranes are, in most cases of narcotic poisoning, congested, but Christison denies the universality of such an appearance, and Beck quotes a case, recorded by Stanley, in which the brain itself presented no unusual appearance, but the cellular tissue of the pia mater was much infiltrated with serum.

The lungs, as in cases of narcotic poisoning generally, were much congested.

The stomach, at its more dependent portion, presented a copious infiltration beneath the mucons membrane: this is held by Christison to be very seldom the result of natural causes: in the present instance, it may very probably be referred to the irritation caused by the remedial agents employed, viz., ammonia, brandy, and mustard. The analysis of the stomach's contents was rendered of little value by the length of time which had elapsed between the assumption of the suspected dose and the patient's decease; this, too, had been preceded by a constant diarrhoea, which would have rendered the discovery of the poison improbable even had it been known to have been taken extensively.

Thus far, then, no appearance had been observed which directly militated against the *supposed cause of death*, which was moreover negatively substantiated by the non-existence of aught which could satisfactorily account for the symptoms during life; the state of the kidneys, however, was sufficient to raise a doubt on the subject, since it is well known* that death by

* See "Bright's Hospital Reports," and "Christison on Granular Degeneration of the Kidneys."

In ten cases which have come under the writer's observation, and in which granular degeneration of the kidneys has been found to be present upon post-mortem examination, five have died comatose, and, of the others, one had sustained a constant succession of fits some weeks before death. Becquerel (*Semiotique des Urines*, p. 464), denies the influence which this disease is stated by English writers to exercise over the brain, in these words: "Je ne puis admettre avec Mons. Christison l'action du sang altéré sur le cerveau. Il est très-rare, en France du moins, de voir succomber des individus atteints de dégénérescence granuleuse à des troubles fonctionnels de ces organes;" nevertheless, under the head

coma is a frequent conclusion of Bright's disease. Seeing, therefore, that the affection under which the deceased had laboured, and such symptoms as he had presented, might exist as "cause and effect," and that there was ascertained no *proof* of the exhibition of a poisonous dose of opium, it was reasonable to conclude that death resulted from natural causes. As being likely to afford corroborative evidence, I instituted an analysis of the cerebral substance (in the prosecution of which I had the valuable assistance of Mr. Charles Palmer, Dispenser to the Queen's Hospital): the result was the discovery of urea.*

It remains to be inquired whether, with a predisposition to cerebral affection dependent upon the existence of renal disease, a dose of opium which, under other circumstances, would have proved innocuous, were capable of producing effects which, without its exciting influence, might have long remained dormant. Having repeatedly administered preparations of opium for complications of Bright's disease with benefit, and without the supervention of cerebral symptoms, I am disposed to answer this question in the negative. Opium produces coma by causing congestion of the brain: in Price's case the brain was remarkably exsanguine; and in the majority of cases of Bright's disease which have come under my notice, where cerebral symptoms have been developed, the pallid condition of the conjunctiva has indicated inanition rather than congestion of the cerebral vessels:† in such cases small

"Symptomes Nerveux," he observes, that out of forty-five persons who have died of this disease (spécialement dans l'agonie) eight had presented somnolence, four coma, and one convulsions. (Op. citat. "Symptomes Nerveux.")

* Dr. Douglas MacLagan has detected urea in the fluid effused into the ventricles of the brain in a case of fever (see Cormack on the Fever of 1843). A case has been recorded by Mr. Arnott, in which suppression of urine and coma preceded death for two days. Dr. Fownes discovered urea in serum effused into the cerebral ventricles (see Medical Gazette of Dec. 27th, 1844). In two cases which have occurred at the Queen's Hospital since that which forms the subject of this paper, urea has been detected by Mr. Palmer; in the one case in serum effused into the ventricles, and in the other in the substance of the brain itself.

† It is well known that congestions (de-

doses of opium, by reason of their stimulating property, would seem likely to have a beneficial tendency, for the experiments of Bichat have proved that unhealthy (poisonous) blood circulating through the system is better than none.

In the eleventh volume of the Medical Gazette, p. 777, was published a paper by Dr. Wilson, in which he insisted "on the intimate, constant, and vital connexion of the brain, lungs, and heart, with the kidneys, through the medium of the blood, as illustrated by the morbid anatomy of those glands; and that in all cases of sudden death these organs ought to be examined, whether disease be found elsewhere or not." The paper was illustrated by seven cases which had "occurred within the author's observation, in which death more or less sudden, and for the most part preceded by fits, had taken place, no effusion or lesion having been found within the head, but disorganisation presenting itself in the kidneys, of a nature to have interfered with the discerning power of the glands." Christison, who mentions the possibility of the

pendent upon a diminished tonicity of the vascular apparatus which naturally results from defective nutrition, and probably partly also upon the poisonous influence of urea upon the nervous centres) are variously manifested in Bright's disease; the brain may thus, in common with the other organs of the body, be occasionally congested, and from this circumstance cerebral symptoms may be developed; but cerebral symptoms are not necessarily the effect of congestion, for in Bequerel's thirteen fatal cases in which such symptoms had existed no lesion could be detected to account for them, excepting in one case in which there had been "acute meningitis." In the five cases of death by coma in Bright's disease, which occurred at the Queen's Hospital, under the writer's notice, the state of the brain as ascertained by post-mortem examination was as follows: viz. in two it presented no unusual appearance, (in these cases no analysis was made); in one there was copious extravasation of blood into the substance of the left hemisphere, in consequence of rupture of the middle cerebral artery, and extensive serous effusion into the ventricles, (this fluid subjected to analysis, yielded urea in large proportion): in the remaining two cases (including the subject of the present paper) the brain was remarkably exsanguine; in both these urea was present in the cerebral substance.

symptoms of Bright's disease being mistaken for those of "poisoning by opium," after adverting to cases published by himself and others, writes, "In none of these, however, could there have been any risk of mistaking the phenomena for narcotic poisoning. But it may be well to advert to the subject here, for the sake of turning the attention of the profession to the propriety of examining the state of the kidneys in all medico-legal cases of death in a state of coma."

The case of Price, then, appears to be the first on record, in which circumstances have existed tending to confound the symptoms of Bright's disease with those of poisoning by opium: it evinces the absolute necessity for an examination of the kidneys in all medico-legal cases of death in a state of coma, as recommended by Drs. Wilson and Christison: it shows that *Bright disease may undermine the vital powers so insidiously, that fatal coma shall be the first recognised symptom*: it also demonstrates the correctness of a law laid down by writers on medical jurisprudence—viz. "That the symptoms, however exquisitely developed, can never justify an opinion in favour of more than high probability."

Christison objects to this law as being too exclusive; but if we measure the value of symptoms in the case under consideration by the standard which he proposes, still shall we find them fallacious; for here were all his characteristics of *general poisoning*, viz.:—A sudden commencement, and rapid fatality; a steady increase of symptoms, and uniformity in their character throughout; the occurrence of symptoms shortly after assumption of a suspicious dose; and the only previous departure from apparent health† was diar-

* Out of 19 cases lately recorded by Dr. Francis as "illustrations of some of the forms of sudden death," 9 of the patients were affected with organic disease of the kidneys (see Guy's Hospital Reports, April, 1845). Of 10 fatal cases of Bright's disease which came under the writer's notice during his residence at the Queen's Hospital, sudden death took place in 6; in 4 of these six cases coma ushered in the fatal termination; the other two patients (with whom hydrothorax was the most prominent symptom) died from sudden compression of the thoracic viscera consequent upon slight exertion.

† Dropsy, which, in some form or other, is a usual concomitant of Bright's disease,

rhœa of a few days' standing, which had not prevented the man from carrying on his usual employment. There was, moreover, present one symptom, which Christison considers a safe guide to a diagnosis of a particular species of poisoning, and that species was such as circumstantial evidence, exclusive of symptoms, rendered probable; and yet, notwithstanding these indications of poisoning, general and specific, a perusal of the details of the case can hardly fail to lead to the conviction that all the symptoms manifested were the natural consequences of Bright's disease.

It may be well, perhaps, to give a brief summary of another case, in which the connexion between Bright's disease and death by coma was well marked; the symptoms will be seen to be very analogous to those exhibited in the case of Price. A brewer, æt. 30, was admitted into the Queen's Hospital, under Dr. Melsan, on the 16th of September, 1844. He was stated by his friends to have been a hard drinker, but to have had, apparently, good health till within the last three days, during which time he had passed no urine, and had been insensible.

Symptoms. — Insensibility, temporarily removable by excitation; when roused he answers questions, but rather incoherently; countenance pale and œdematous; eyes fixed, with a vacant expression; pupils contractile; sclerotic of pearly whiteness; conjunctivæ generally extremely pallid; pulse small and weak. No defined abdominal tumor detectable; abdomen generally tympanitic, excepting in the right and left lumbar regions; tenderness of right lumbar and hypogastric regions; stools pass away involuntarily. A catheter was passed, but no urine flowed; and despite of active treatment, coma with stertor and blowing respiration supervened. He died on the 4th day after admission.

Post-mortem examination. — The brain was firm and exsanguine; the lungs con-

was altogether absent: if suppression of urine existed, as it probably did, it remained unfortunately undiscovered, in consequence of the patient having been conducted, on each recurrence of diarrhœa, to the water closet. The details of symptoms and circumstances elicited from the wife of the deceased—who wanted to obtain pecuniary compensation from the druggist for "poisoning her husband"—were so contradictory, that no satisfactory conclusions could be drawn from them.

VOL. III.—33

gested. The heart weighed 15½ ounces, free from valvular disease; right cavities dilated. The right kidney weighed 12 ounces, was soft and friable; the lining membrane of its pelvis (which was large) ulcerated extensively. The left kidney, weighing three ounces, consisted of little else than the distended pelvis, which contained about half a pint of albuminous fluid, floating in which were numerous vesicular bodies, of irregular form (apparently owing to commencing putrefaction). About one ounce of urine was found in the bladder; this was albuminous. The other abdominal viscera were healthy. The peritoneal lining of the abdominal parietes on the right side, and also the serous investment of the ascending colon, were intensely inflamed, and here and there coated with fibrin.

Urea was found to exist extensively in the cerebral substance. — *Med. Gazette.*

BULLETIN.

Philadelphia, November, 1845.

WE have enjoyed the privilege of looking over a complete copy of the new edition of Dr. Gross's *Pathological Anatomy*, which will, we learn, be published next month. It is a noble volume, both by its intrinsic merits, its pictorial illustrations and the entire mechanical execution. After an opportunity is allowed us to give it a more careful and continuous perusal, we shall speak in greater detail of its contents and merits.

London Medical Schools.

The *Lancet* for September 27, 1845, mainly consists of notices of the Hospitals and Schools of Medicine for the Session of 1844-5. The number of the latter institutions is twelve, of which eight are connected with and take the names of hospitals, viz.; London Hospital School; Guy's Hospital School; St. Thomas' School; St. Bartholomew's School; Middlesex Hospital School; Charing-Cross School; Westminster Hospital School; and St. George's

Hospital School. The two schools with Collegiate charters are, University College and King's College, to each of which is attached a hospital of subsequent origin to that of the Colleges; whereas the other, or Hospital Schools, have been ingrafted on the hospitals. There are two institutions for teaching, — Aldergate School of Medicine, and School of Anatomy and Medicine — without direct hospital connexion or affiliation, although in the case of the former, each of the lecturers is connected with an Infirmary or a Dispensary or a Hospital, to which he gives the pupils access free of charge.

King's College Hospital "is situated in the neighbourhood of the College, and accommodates 120 patients." Its physicians and surgeons, two of each class, are, of course, professors of the College. Of the assistant-surgeons, two in number, one is a professor; as is also the assistant-physician. The physician-accoucheur to the hospital is professor of Midwifery in the College. A similar state of things exists in the University College Hospital. In this, however, the number of physicians is four, three of whom are professors in the University College, viz: Drs. C. J. B. Williams, Thomson, and Walshe.

The College of Physicians and the College of Surgeons do not give lectures, but subject candidates to examination for membership after they have complied with certain conditions, among which is attendance for a certain period on lectures and in hospitals, specified by the Colleges, respectively. One of the requisites for fellowship in the College of Surgeons is, that the candidate has attended lectures on the theory and practice of medicine, and on clinical medicine, and, also, on the theory and practice of surgery, and on clinical surgery, during two courses of six months each, at one or more recognised school or schools. He is, also, required to have attended one course of lectures on each of the following subjects, viz.: chemistry, materia medica, midwifery, medical jurisprudence and comparative

anatomy, at one or more recognised school or schools.

Let us take Warning.

We seldom allow a fitting occasion to escape without directing attention to the circumstances under which the public health suffers, — whether these be from faulty localities, and excessive crowding in cities, or deficient nutriment, want of cleanliness and habits of intoxication in both town and country. The subjoined paragraphs contain nothing new; but as they enforce a truth which is far from being appreciated at its full importance by projectors of towns and owners of buildings, and which does not engage as it ought the attention of legislative and corporate bodies, we introduce them here. We must, however, before doing so, correct the error which includes Liverpool with the manufacturing towns, and attributes to manufactures evils that are incidental to a crowded population, over whose health and morals no salutary guardianship is exercised during the period in which the operatives are not occupied with their proper work. The chief evils arise from these people living, when not at work, in small, illy ventilated, often filthy, houses, in narrow streets and courts, with the other members of their families, and too often consorting with the dissipated and the vicious, at beer-houses, gin-shops, &c.:

"The difference in the amount of mortality in the agricultural, compared with that in the manufacturing districts and towns in England is most striking, the ratio ranges from one death in 54 to one death in 29 of the inhabitants annually; a deplorable example and proof of the difference in the physical condition and comfort of the respective classes of our labouring population. It is reckoned moreover, that, out of every 1000 births, 221 only die under five years of age, in our agricultural districts: while not fewer than 385 die annually, under the same period of life, in all of our closely-built towns. This is a sad reflection: no one can doubt for a moment the amount of mortality among our operatives, and how much it might be most sensibly diminished by the introduction of appropriate sanitary regulations. Remember that in Birkenhead, at least 33,000, in Mar-

Liverpool no fewer than 100,000 human beings compressed within the compass of a single square mile, and a vast proportion too of these inhabitants living in squalor, wretchedness and vice, how can we be surprised at the high rate of mortality in such places, more especially in the last-named town, our great western seaport? Read what Mr. Martin says on the subject:—

“Resuming the comparison again, we find that, in a thousand deaths in the country districts, 202 persons attain the age of 70 years; while in Liverpool, for instance, but 90 persons out of 1000 attain to the same age; and while the average age at death in agricultural Rutlandshire is 38 years, it is stated to be but 21 years in Liverpool. Taking the same population it has been shown by the Registrar-General that in four years a greater number died in town districts than in country districts by 99,752. Again, out of 1,000,000 of persons living, there occurs annually in the country, and where the population to the square mile is but 199 persons, 19,300 deaths; but in towns and where the population to the square mile is 5108 persons, there occur 27,073 deaths. We find also that fever—the great disease of adolescence and manhood—the disease that most afflicts men and women at the most useful and valuable period of life—the great destroyer of mankind in every climate—is bred and propagated in an especial manner in large towns; that towns present exactly in proportion as they are closely built and inhabited, the largest proportion of sickness and death from fever, not only as compared with the population, but with the total number of deaths from all causes. The fevers of the crowded quarters of London and of all the great towns is annually assuming a more formidable character, with an increase of its contagious virulence and power of propagating itself; its type every where indicating increased depression in the powers of life, as shown by the progressive lowering in the tone of the nervous and vascular systems.”

“Besides the continually devastating effects of fever among the lower classes of the population in large towns, we find that almost every disease, without exception, is more fatal in the manufacturing than in the agricultural districts of our land. So much is this the case, that the increase of deaths among children is four-fold by epidemics, and nearly ten-fold by convulsions, in towns as compared with the country. Among adults, too, the prevalent epidemic diseases are more than thrice as fatal in Liverpool and Manchester than in the country: while the deaths by diseases of the lungs are nearly doubled, those by diseases of the nervous system are as 5½ to 1, and by diseases of the digestive organs as 2½ to 1. All observation, continues our intelligent author, goes to demonstrate that the habit of consuming large quantities of food, and the consequent increase in the number of persons who are crowded into small spaces, and the want of ventilation in such places, are the principal causes of the increase of disease and death in large towns.”

DEATH OF PROFESSOR RICHARDSON.*

Died, on the 14th of September, at his residence near Lexington, Dr. William H. Richardson, Professor of Obstetrics and the Diseases of Women and Children in Transylvania University. The disease which terminated his life is said to have been typhoid fever, of which cases appear to have been occurring in Lexington and its neighbourhood for two years past. The deceased, up to the time when he was seized with this fever, was in vigorous health, and, as he was of a long-lived family, was looking forward to a green old age.

Dr. Richardson was a native of Kentucky, and of the county in which he spent nearly all the years of his active life. He studied medicine in Lexington, and afterwards attended medical lectures in the University of Pennsylvania. His primary education was much neglected, and he entered upon the practice of his profession in the spring of 1806 after hearing a single course of lectures. He settled in Georgetown, where he resided up to the commencement of the war in 1812. In the autumn of that year he went out as surgeon with one of the volunteer Kentucky Regiments after the downfall of Detroit; but was sent back with a sick officer. About this time he removed to Lexington, and in the year 1815 or 1816 was appointed Professor of Obstetrics in Transylvania University, then in a forming state. In 1816-'17 he delivered a few lectures on obstetrical medicine, but the University class was not organised until the fall of 1817; he then, in connexion with Drs. Blythe, Dudley, Drake, and Overton, delivered a full course. In the spring of 1818, after having been before the public as a teacher, he received the honorary degree of M. D. from the University of New York. In 1819 the medical department of Transylvania University was reorganised, and he resumed the duties of the chair which he continued to hold up to the time of his decease. He has the honour, therefore, of having been connected with the first scheme for medical teaching in the Valley of the Mississippi, and of those who were associated with him in the beginning he leaves but one behind him in the school. Of his earliest colleagues Dr. Dudley, Dr. Drake, and Dr. Overton survive him, but Dr. Dudley alone remains in Transylvania of the professors who renewed the enterprise. Dr. Brown was the first to resign

his place in the school, which he did in the spring of 1826, and the first also to pay the debt of nature, an event which took place not many years after his resignation. Dr. Blythe followed him in the order of his resignation and death, and Dr. Caldwell has been removed to a new theatre, where he is still zealously engaged in teaching. Dr. Richardson held on for more than a quarter of a century to the chair of his first choosing. Many resignations have occurred in that school from year to year; he never resigned. Dr. Drake gave up his professorship a second time, after four years' experience in the school, and subsequently four out of the six members of the Faculty came to the Medical Institute of Louisville; but Dr. Richardson, while he was sensible of the superior advantages which this school would enjoy, made up his mind to continue in the institution which he had been instrumental in building up. Amid all the changes which have since taken place in Transylvania, he remained fixed where started.

The wonder has often been expressed, that a teacher so deficient in every thing like scholarship should have been able to maintain so respectable a rank for so many years. Professor Richardson's education unquestionably was very limited. He was totally ignorant of every language except our own, and even of that he possessed but an imperfect knowledge, inasmuch that he had a repugnance to writing, and hence has left behind him in a durable form but little of his experience acquired during nearly forty years of diligent practice.

It cannot be denied that this destitution of preliminary learning detracted from his dignity and usefulness as a teacher, for young men, struck with his grammatical blunders, were too prone to conclude that he must also be wanting in professional knowledge. It was the impression of his first classes that he appropriated not only the thoughts but the language of Burns too extensively in his lectures; but his judgment and ability as an obstetrical practitioner were never questioned, and by much reading it is certain that he made amends, in subsequent life, for the imperfections of early teaching. He never became a scholar; but he corrected, one after another, the more glaring faults which provoked the merriment of his first pupils, and what was of still higher consequence, kept his mind informed of all the improvements in his branch of the profession. As he never aspired to originality, and had no cherished

theory to defend, his understanding was ever open to conviction, and he was prepared to welcome knowledge from whatever quarter it might approach him.

If we were asked upon what did his success as a teacher depend, we should answer, mainly upon his social qualities. These attached strongly to him a large body of his pupils, and made him a favourite in the community of which he was an active member. Students, who felt a warm personal regard towards him, could make liberal allowances for the absence of literary grace in his lectures. But to many amiable social qualities, and many manly traits of character, he added also a style of lecturing which pleases the ear of Western young men. His elocution, indeed, with the finish which a correct knowledge of his native language would have imparted to it, would have been highly pleasing, and even impressive. His manner of speaking was loud, earnest, and oftentimes vehement, after the fashion of the stump. He was of a bold, impulsive temperament, and his confident air, aided by an agreeable voice, fixed the attention of the less fastidious portion of his audience. When to all this we add, that he was experienced as an obstetrician, and was reputed to possess peculiar skill in that department, we have, perhaps, the elements which contributed chiefly to maintain him, in spite of his acknowledged deficiencies, for so long a time in his elevated position before society. Undoubtedly, he was much better versed in medical science than in letters, and in our profession, we know, that instances are not wanting, of men attaining to the highest rank with the slenderest literary acquisitions. John Hunter would have made an exceedingly sorry figure among scholars, but nevertheless, he made himself the first surgeon of his age.

Professor Richardson was greatly beloved by his private pupils, and his memory will be held in grateful remembrance by many who shared in his personal kindness. Of those whom he instructed some are now teachers themselves, from among whom it would seem meet that his successor should be chosen.

This hasty notice has been written out the materials necessary for a biographical sketch of the deceased, but so familiar with his history, we hope to favour the profession with an eulogium of his life and character.

We are happy to be able to add that Professor Richardson was many years

member of the Baptist church, and that he was calm and resigned in view of his approaching dissolution.

VACANCY IN TRANSYLVANIA UNIVERSITY.

From the following notice it will be perceived, that the appointment of Professor Richardson's successor is not to take place before the last of January next, and that the instruction in that chair is to be given, in the interim, by Dr. Mitchell, the Professor of *Materia Medica*.

"*To the Medical Public.*—The chair of Obstetrics and the Diseases of Women and Children in the Medical Department of Transylvania University, is, at present vacant; and with a view to fill it in the best possible manner, applications for the place are invited from the members of the Medical Profession. Communications on the subject must be forwarded to the Dean of the Medical Faculty prior to the 30th day of January next, when the appointment will be made. It will be required, in conformity with a resolution of the Board of Trustees, that the person selected shall make Lexington his permanent residence.

"The name of no one but the successful candidate will be made public.

"M. C. JOHNSON, Ch'm. B. T. T. U.
"Lexington, Sept. 20, 1845."

"*The Vacant Chair of Obstetrics.*—The above refers to a permanent appointment. The duties of the chair for the coming session, will be performed by the Professor of *Materia Medica* and Therapeutics, Dr. Mitchell."

Washington University of Baltimore,

Annual Circular for the Session 1845-6.—The medical faculty of this institution consists of seven professors; the merits of whom and their facilities for teaching are duly set forth; and the books recommended for reference, in connexion with the subjects of the lectures indicated, in the circular now on our desk.

MESMERISM—CLAIRVOYANCE.*

We have had enough of clairvoyance for a whole life; yet nothing in or connected

* Notes on a few more Trials with the Mesmerists in a second search for Clairvoyance, by John Forbes, M.D. — Notes

with it has surprised us half so much as the patience of Dr. Forbes in his endeavours to arrive at, what he calls, the truth,—which, with us, is only another form of expression for exposing the fraud. *Cui bono?* What good can result? If ever there was a case that deserved and received respectful attention, it was the Tynemouth affair;—that case, thanks to Dr. Forbes and Dr. Brown, was thoroughly sifted; as our readers will remember there was not one single assertion in Miss Martineau's whole statement relating to Jane that was not absolutely disproved by her own witnesses. Did this satisfy Miss Martineau that she had been imposed on? Not a bit of it. Well, here again the Doctor favours us with other exposures; one of them so amusingly conclusive that it is worth recording.—George Goble, copying clerk to "a most respectable gentleman" in the Temple (respectable, no doubt—"respectable" gentlemen and ladies are the tools with which knaves work; as the case of St. John Long and other Old Bailey records testify. What indeed is the value of a witness who is not respectable?) was discovered to have "the faculty of clairvoyance." Accordingly, at said "respectable gentleman's," solicitation, the Doctor consented to be present at a private performance, and was, he admits, very much astonished, though a little disappointed, at finding that said "copying clerk" was an old hand at these tricks, and had formerly exhibited in public, under both Mr. Vernon and Mr. Brooks. George's great feat was seeing through a solid body,—reading a paper placed in a card-case, and so forth. The Doctor, having been taken somewhat unawares on this occasion, proposed another performance, which was agreed to; and he went the second time, accompanied by Professors Sharpy and Graham. Of course precautions were now taken, and an attempt was made not only to test George's power but his honesty. George, it appeared, when in his mesmeric trance, was

on yet another Trial by John Forbes, M.D. — Human Magnetism, by W. Newnham, Esq., M.R.S.L. — The Seeress of Prevorst, translated from the German, by Mrs. Crowe. — Somnambulism, translated from the German, by J. C. Colquhoun, Esq., Advocate. — Mesmerism in disease, by H. Storer, M.D. — A Discussion on Mesmerism — Phrenology and Mesmerism, translated from the French.

accustomed to throw himself about, after a strange fashion, on the sofa, and a suspicion very naturally crossed the Doctor's mind that, in this way, he contrived to open the card-case and read the writing. Mr. Sharpey therefore took with him a card-case filled with little bits of cork. "George," says the Doctor, "himself proposed that, to do away with all possible suspicion of unfair play, the card-case should be *tied up*. Accordingly, George himself tied the card-case, in the common cross-fashion, with red tape, &c. George immediately proceeded to his sofa, and went through all his wonted manœuvres, pressing the case to his forehead, and breathing on it with marvellous energy and unction. He was evidently in better spirits than during the last experiment, and openly expressed his conviction that he should "do it" this time. The *sub-pulvinary* manipulations were, of course, not forgotten, and were closely watched. After a considerable time, and often-repeated strong action of the hands, perceptible through the muscles of the arms, some of our party had a glimpse of the card-case, under the edge of the pillow, *without its ligature*, and of the ligature *without its box*! Soon after, we were struck by the sudden and unusual stillness and tranquillity of George, still prone on his field of action; his hands remained motionless in their hiding-place, his head and face buried in his pillow, and we began to think he had gone to sleep—lo! we observed him hurriedly and repeatedly putting his fingers to his mouth, as if placing something therein, and, almost at the same moment, we observed some small fragments falling on the floor beneath the sofa, and exactly below the place of the pillow! These proved to be fragments of cork—mostly comminuted, but some still bearing the characteristic form and dimensions of those so ingeniously concealed by Dr. Sharpey in his card-case. Searching under the pillow, we found some more of them, and also detected the *hiatus valde defendus* in the sofa, through which they had found their way to the carpet! The case was now clear; although George made one more effort to deceive us by exposing the card-case above the pillow *still tied by the tape*, and finally by placing it on the floor beneath his master's foot. But our patience was at last exhausted; we laid hold of the card-case, and announcing George's roguery and its detection, we forced still more of the unlucky cork-slips from his hands and from his mouth! Poor

George was now fairly beaten—and he knew it: all his cunning and impudence, and all his magnetism, deserted him at once; he woke up in the most natural manner imaginable, without any demesmerising process, and with none of that gentle, progressive unlocking of the senses, exhibited on previous occasions; and throwing himself on his knees on the ground, in an agony of shame and terror, confessed his roguery, and implored forgiveness! In doing so, however, the meek and penitent George, like all other habitual culprits when detected, of course strenuously asserted that this was his *first offence*." The *cui bono* is again on our lips. Was the "respectable gentleman," who desired "to seek the truth, and the truth only," convinced? Why he forthwith wrote to Dr. Forbes, that George "*was not awake*" when he fell on his knees and made the confession—that he subsequently awakened him "in due mesmeric form!" that "he awoke in an agony of tears, *quite unconscious of what had passed*, and remains so at this moment." Now if we were to allow this nonsense to pass as true, how would it affect the question? Was the "respectable gentleman" himself, were Dr. Forbes, Professors Graham and Sharpey all in a mesmeric trance, when they saw him open the card-case, and found the fragments of cork in his hands, mouth, and on the floor? One word at parting. Dr. Forbes may rest assured that he cannot minister to minds so diseased,—that "respectable gentlemen" or ladies when they have eaten of the insane root, when they have once declared their faith in humbug, are beyond the reach of logic; whether equally beyond the reach of medicine we shall not take on ourselves to determine. The attempt, however, to convince them is not without risk. Dr. Forbes has himself startled us by the admission, that "reading the words enclosed in these card-cases would at once establish what is called clairvoyance!" Now in all good humour we must observe that there is a lamentable halt in such reasoning—the reading the words enclosed would have proved only that George was a cleverer fellow than the Doctor supposed, and able to outwit a Doctor and two Professors. Why we have known common conjurors who would have been more than a match for the whole College of Physicians. — *Athenæum*.

CATHETERISM OF THE EUSTACHIAN TUBE.

It has frequently occurred to us, as a fact alike strange and derogatory to the pride of British surgery, that while the introduction of probe or catheter into the Eustachian tube is habitually and adroitly practised by the French and Italian surgeons, such operation is very rarely attempted, or, at least, performed with facility and success, in this country. The late eccentric Mr. Abernethy annually avowed, before his class in the theatre of St. Bartholomew's, his inability to achieve this simple feat of manual dexterity; and the great Sir Astley Cooper made, if we mistake not, a like humiliating confession. Now we earnestly exhort every man who feels the conscious dignity and the pride which the title of British surgeon should awake within his bosom, to expunge from his character this, the sole remaining trace of inferiority to his continental brethren. He has only to recollect the site occupied by the faucial orifice of the Eustachian tube with relation to the posterior nares — to furnish himself with a set of catheters such as Mr. Dufton (*On The Nature and Treatment of Deafness, &c.*) has delineated in his engraving, and to pursue the very lucid directions which that gentleman has given at page 72 of his essay; and, with the possession of ordinary tact and dexterity, he cannot fail to succeed. On the great importance of exploration of the Eustachian tube, in its relations to diagnosis and therapeutics in diseases of the human ear, no diversity of opinion can possibly exist among reflecting and enlightened men. To all such men, to the philanthropist and the philosopher, we especially recommend an attentive perusal of the fourth and last chapter of the work, "On the Deaf and Dumb." It contains views and suggestions alike distinguished by their beneficence and value. — *Lancet*.

New Orleans Medical and Surgical Journal.

We omitted to notice last month that the second, or September number of our friend, the New Orleans Medical Journal came to us with a title somewhat modified by a union of its editors, Drs. Fenner and Hester, with Drs. Carpenter and Harrison, who had projected a new Journal to be called the Louisiana Medical and Surgical Journal. Thus reinforced in its editorial corps, we are sure of valuable acces-

sions to a store already rich, and prized in so many parts of the country.

We would suggest, partly in the interests of the Journal, and, still more, for facile reference to its pages, that an index of the first volume should be prepared and sent to subscribers. We would proffer, with becoming respect, a similar request to the intelligent editors of the *Journal of Insanity*, which we are glad to see enters on its second year without any abatement of those qualities that rendered the first so attractive.

SLEEPY DISEASE.

"We arrived at Maumee's town, a village of thirty or forty huts, where a considerable slave-trade was carried on, until broken up by the colonists under Governor Ashman. Old Maumee still resides here, and cherishes a bitter hatred against the Liberians, and all Americans and Englishmen, as having caused the ruin of her profitable commerce. The old hag was not now at home, having obeyed the custom of the country by retiring to a more secluded spot, for the purpose of nursing a sick grand-daughter. * * * Having procured a guide, we crossed the river, and, at the mouth of Logan's creek, exchanged our boat for a large canoe, in which we followed the windings of the deep and narrow inlet for nearly two miles. This brought us to a village of six huts. Without ceremony, we entered the dwelling of the old queen (who was busied about her household affairs), and looked around for her grand-daughter, to see whom was the principal object of our excursion. On my former visit to Maumee's town, four or five months ago, this girl excited a great deal of admiration by her beauty and charming simplicity. She was then thirteen or fourteen years of age, a bright mulatto with large and soft black eyes, and the most brilliantly white teeth in the world. Her figure, though small, was perfectly symmetrical. She is the darling of the old queen, whose affections exhaust themselves upon her with all the passionate fire of her temperament — and the more unreservedly, because the girl's own mother is dead. We entered the hut, as I have said, without ceremony, and looked about us for the beautiful grand-daughter. But, on beholding the object of our search, a kind of remorse or dread came over us, such as often

affects those who intrude upon the awfulness of slumber. The girl lay asleep in the adjoining apartment on a mat that was spread over the hard ground, and with no pillow beneath her cheek. One arm was by her side—the other above her head—and she slept so quietly, and drew such imperceptible breath, that I scarcely thought her alive. With some little difficulty she was roused, and awoke with a frightened cry—a strange and broken murmur—as if she were looking dimly out of her sleep, and knew not whether our figures were real, or only the phantasies of a dream. Her eyes were wild and glassy, and she seemed to be in pain. While awake, there was a nervous twitching about her mouth and in her fingers; but, being again extended on the mat, and left to herself, these symptoms of disquietude passed away, and she almost immediately sank again into the deep and heavy sleep in which we found her. As her eyes gradually closed their lids, the sunbeams, struggling through the small crevices between the reeds of the hut, glimmered down about her head. Perhaps it was only the nervous motion of her fingers; but it seemed as if she were trying to catch the golden rays of the sun and make playthings of them—or else to draw them into her soul, and illuminate the slumber that looked so misty and dark to us. This poor doomed girl had been suffering—no, not suffering; for, except when forcibly aroused, there appears to be no uneasiness—but she had been lingering two months in a disease peculiar to Africa. It is called the ‘sleepy disease,’ and is considered incurable. The persons attacked by it are those who take little exercise, and live principally on vegetables, particularly cassady and rice. Some ascribe it altogether to the cassady, which is supposed to be strongly narcotic. Not improbably the climate has much influence, the disease being most prevalent in low and marshy situations. Irresistible drowsiness continually weighs down the patient, who can be kept awake only for the few moments needful to take a little food. When this lethargy has lasted three or four months, death comes—with a tread that the patient cannot hear, and makes the slumber but a little more sound. I found the aspect of Maumee’s beautiful grand-daughter inconceivably affecting. It was strange to behold her so quietly involved in sleep—from which it might be supposed she would awake so full of youthful life—and yet

to know that this was no refreshing slumber, but a spell in which she was fading away from the eyes that loved her. Whatever might chance, be it grief or joy, the effect would be the same. Whoever should shake her by the arm—whether the accents of a friend fell feebly on her ear, or those of strangers, like ourselves, the only response would be that troubled cry, as of a spirit that hovered on the confines of both worlds, and could have sympathy with neither. And yet, withal, it seemed so easy to cry to her, ‘Awake! Enjoy your life! Cast off this noontide slumber!’ But only the peal of the last trumpet will summon her out of that mysterious sleep.”
— *Journal of an African Cruiser.*

BIBLIOGRAPHY.

Harrison’s Elements of Materia Medica and Therapeutics.*

In concluding our notice of the first volume of Dr. Harrison’s Elements of Materia Medica and Therapeutics, at the beginning of the present year, we said—“We look forward with much satisfaction to the appearance of the second volume.” Our expectations, now that the entire work is before us, have not been disappointed. Open though it be to criticism in minor matters of detail and a style too often cumbersome and inflated, it abounds, nevertheless, in able therapeutical teachings, and conveys with more distinctness and connexion, the indications of cure, as deduced from or enforced by pathology, than any other with which we are acquainted;—and on this subject it has been our lot to write and lecture, and in so doing to refer—not scantily, we believe—to the approved works in libraries and contemporary contributions in journals. Dr. Harrison carries his readers beyond the narrow limits of mere pharmacy and materia medica, to a large and comprehensive view of the modifying agencies suggested by general therapeutics, without neglecting hy-

* Published by Thomas, Cowperthwaite & Co., Philadelphia, and by Desilver & Burr Cincinnati. Vol. II. pp. 619. 8vo.

giene:—in fine, he looks to the whole art of cure.

The second volume—that recently published and now before us—treats, in the first place, of the Particular Evacuants, to which one-half of the volume is devoted. On the subject of Blood-letting, the author is very full, and, notwithstanding the impression that his florid language may produce of diffuseness, he is concise in his ideas and methodical in their connexion. We commend,—without avouching for the truth of all his views and maxims,—the whole chapter to the careful perusal of the student and practitioner whose opinions are not yet formed on a satisfactory basis. The prominent doctrines respecting the circumstances under which bloodletting is required, whether these belong to general or special pathology, are deduced from a consideration of the state of the system at large, or, what is more frequently the case, of that of a particular organ or tissue; and are brought out with adequate distinctness, and exhibited, for the most part, in their actual and relative importance. On some points—as when speaking of the indications for bloodletting in hydrocephalus and in congestive fever, we miss desirable specifications in the state of the meninges, in the former, and of the circulation and the state of certain organs in the latter. Rush and Sydenham are not the available authorities, as recommended by Dr. Harrison, to guide the student in acquiring a correct pathology of congestive fever. The latter should be referred to Torti, Cleghorn, Senac, Alibert, and Bailly, for this purpose, not to mention some contemporary writers, who have embodied the views and practice of these medical classics on this interesting topic.

In speaking of Emetics, and, specifically, of tartar emetic in croup, Dr. Harrison uses language, calculated, we fear, to deter practitioners from having ready recourse to this remedy,—for remedy it is, paramount to all others,

—as when he says: “Death from the violent action of the article has so often taken place in children, to whom it was administered for croup, that great caution is to be observed in its exhibition.” After a long and large experience in the use of tartar emetic in croup, we must declare that we cannot participate in the “caution” which, as thus accompanied, would almost imply prohibition. So strong are our own convictions of its efficacy and the general safety of administering it, that we recommend to mothers who have had some experience in croup, to have tartar emetic in adequately divided doses, at hand, ready to be given by them in the course of the night, in preference to syrup of squills, hive syrup, or ipecacuanha, which often do not produce the requisite decided impression on the mucous membrane of the larynx and blood-vessel system, even when they cause vomiting. We have never seen sinister results from the employment of tartar emetic, either in croup or in other diseases in which we have largely presented it; nor do we believe, that, with common attention, they will occur more readily or frequently than in the instance of any other drug or active medication.

On the question of the value of this medicine in pneumonia, the author speaks in some detail. We must demur to the correctness or good taste of such wholesale criticism as that too much in fashion among us, when speaking of French and other continental physicians, and of which we meet with an unpleasant specimen in the following sentence: “Not reposing entire reliance upon the statements made by certain Italian and French physicians, as respects the tolerances of the system to its action in pulmonary inflammation, nor of its exclusive power of cure over the disease, we readily concede that great confidence is to be placed in its vast reach and compass of action in the subdual of the urgent vascular irritation for which it is given.” To this we

would reply, that general denials ought not to prevail against specific and positive statements, prepared according to the rules of sound logic and enforced by evidence of a clear character. The medical writers of France and Italy are sometimes mistaken in their deductions; they may sometimes be false in their declarations; but in the main they present their subjects in a more trustworthy fashion,—because it is precise, definite, and detailed, than we are wont to do here at home, whose convictions are too often the results of desultory observation and imperfect reminiscences.

In the chapter on Cathartics we meet, in the volume before us, with sound remarks on the *modus operandi*, practical uses and abuses, of this highly important and ever-resorted-to class of medicines.

The large and clear views taken of Incitants or Excitants, by Dr. Harrison, in his reference to vital as well as artificial stimuli, and his emphatic mention of the importance of the former, both for the preservation of health, and the cure of disease, are entitled to commendation. The same may be said of the circumstances under which alcoholic drinks are admissible in certain diseases, while their habitual use in health, and even in chronic affections is reprehended. To their administration for the cure of *mania à potu* he is utterly opposed, "not only on the grounds of its direct and remote injurious tendency, but on account of the great superiority of another plan of treatment." In another dictum, particularly applicable to country practice, we fully concur. "Instead of prescribing those vile compounds, which pass under the names of port and madeira wines, give your patient, where the case calls for such a prescription, distilled liquor of a sound, good body."

In the chapter on Tonics, some useful dietetic instructions precede a mention of the indications for the use of medicines of this class, and each article in

particular. The attribution of decided sedative and anodyne properties to the disulphate of quinia, might be extended beyond "some distinguished practitioners in the south." This argument has been fully sustained and extended by at least one writer and practitioner in the east, though he does not lay claim to be distinguished. We confess some disappointment in the section on Cinchona and its active constituents, for the most opportune circumstances, in administering which and a notice of its best adjuvants and corrigents, we expected more of general direction, and of specification, also, than the author has thought proper to favour us with. A similar remark applies to iron, and its preparations; the conditions for the judicious use of which must be deduced from a very extended consideration of certain pathological states of the system and particularly of anemia, on which silence is preserved in the present volume. Of the different preparations of iron, the iodide was entitled to notice in the "Elements."

The chapter on Secretions opens with some pertinent observations on the means often injudiciously resorted to for restoring them, and it is continued by discussion on the indications of cure from articles of this class, as furnished by the physiology of the Secretions, their pathological states, and their therapeutical relations to constitutional disorders, as well as local affections. When treating of Diaphoretics, the author makes a remark, itself a corrective, of the mischievous routine practice in the use of those remedies, as when he tells us: "Blood-letting, as an indirect sedative, is of the utmost value in febrile and tory disorders, and its opstitutional." So, also, in the cold, in others the w give rise to diaphoresis; exclusively that although we class of diaphoretics, they medicines and agents of the

posite properties, and effects, in other respects in the economy;—according to the state of the system at the time of their administration. We cannot, however, extend the same praise to some views, both trite and inaccurate as we believe them to be, respecting the action of the cold bath, as a tonic in debilitated constitutions, or as an astringent in hemorrhage; and contradicted by the author himself a few sentences farther on, when he speaks of “the sedative operation of the cold bath.”

We shall not pretend to follow the author, *seriatim*, with any thing like a methodical criticism, in his sections on Diuretics, Expectorants, Emmenagogues, and Anthelmintics, the last of which, by the way, can hardly be regarded in the light of inducers or excitors of secretion. The next chapter is taken up with Anodyne or Narcotic Indication; and the work terminates with one on Revulsive Indication, in which much useful suggestive observations occur, besides direct instruction for our guidance in this important part of medication.

The pleasure of reading, if not the sense, is marred too often by typographical errors in these volumes. They occur both in the common words, and in the names of authors, such as Brichatan for Bricheteau, Bouillard for Bouillaud, Thompson for Thomson, Bretenneau for Bretonneau, Mandel for Mandl. These and certain redundancies at which we have hinted, in the beginning of this notice, will doubtless disappear, and some omissions be filled up in a future edition, which we not only hope but believe, with some confidence, Dr. Harrison's *Elements of Therapeutics and Materia Medica*, is destined to reach.

Hoblyn's Medical Dictionary.*

This Dictionary of Mr. Hoblyn comes

* A Dictionary of Terms used in Medicine and the Collateral Sciences. By Richard D. Hoblyn, A.M., Oxon. First American, from

to us with favourable testimonials from the critical reviewers of his own country, and having acquired weight by the additions of Dr. Hays, will, we must suppose, be received with equal favour here. We do not profess to scan it with a critic's eye, but, in looking over it, we find words which, as they are contained in every English dictionary, and as they are neither technical, nor belong to Medicine, nor, without a strained construction, to its collateral sciences, might well have been spared from its pages. We would mention, for example, *Ennui*, *Flax*, *Gin*, *Indigenous*, *Ink*, *Plaster of Paris*, and *Stucco*. If it be thought necessary to introduce the word *Quart*, and to define it to be the fourth part, or quarter, of a gallon, why should *Gill* be left out, or the explanation of its being the fourth part of a pint. In the intercourse between physician and patient, the latter term will more frequently occur than the former one.

Under the head of *Pilula*, and after its definition, the American editor introduces the formulæ for the preparation of the officinal pills in the United States Pharmacopœia. We notice this in order to express our dissent from attempts which must, of necessity, be incomplete and very imperfect, to combine, within moderate compass, in the same volume, a Dictionary of Terms and of Descriptions. In the present work, as the editor has given us the officinal pills and the officinal tinctures, we naturally expect to find the extracts, infusions, and decoctions also. By what rule or system can a selection be made? Either all should be admitted, or all introduced. One can hardly claim greater relevancy than the other; but where all can be compared we are not required to institute comparisons of this nature. In a Pharmacopœia or a Dispensatory does the student naturally

the Second London Edition. Revised, with Numerous Additions, by Isaac Hays, M.D., Editor of the American Journal of the Medical Sciences. Philadelphia: Lea & Blanchard. 1845. pp. 402. 12mo.

and properly seek for information on these topics, which can never be elucidated to his satisfaction in a work like the present, unless it were swelled out into the capacity and assume the character of a Cyclopædia. These remarks apply to all the branches of medicine. Occasional specifications of mere learning, or rather pedantry, have still less to recommend them, as when, under *Plaster*, the author introduces *Plaster of Rivernus* and its composition, "used in cases of aneurism." Except this *Plaster of Paris*, we find no other plaster designated; nor was it at all necessary to specify them: the last might very well find a place in a Dictionary of Agriculture, or a Dictionary of the Arts.

Mr. Hoblyn, like some of his contemporaries, makes his definitions to correspond at times with the meaning of the derivative word, and, it may be, with olden speculative notions, rather than to express the present understanding attached to the term itself. Thus, the familiar word *Digestion*, physiologically receives a latitude of interpretation consonant enough with its Latin origin, but not scientifically correct; as when it is made to indicate not only the changes of the food brought about by "the mouth, stomach, and intestines" [why not say, also, liver and pancreas], but likewise "by the absorption and distribution of the more nutritious parts, or the *chyle*, through the system." In digestion proper are here actually included absorption and circulation, for it is by this latter function that the chyle is distributed through the system.

But even admitting the correctness of the preceding remarks, and that there are redundancies, and owing to these, in part, omissions, with occasional inaccuracies, the great body of this Dictionary remains to aid the student in his professional readings, by explanations of terms which would otherwise embarrass or render them imperfect.

The New York Medical and Surgical Reporter is the title of a new Journal edited by Dr. Clarkson T. Collins, the main design of which—as set forth in the "Introduction"—is to be the record of the Medical and Surgical Practice of the city of New York, and more particularly of its Public Institutions. Concise reports of all the interesting cases occurring at the chief "Cliniques," and also of the Clinical Lectures delivered by the Professors of Surgery of the two Colleges are promised,—including notices of different institutions—Hospital, Infirmary, Asylums, Dispensaries, &c.

The first number of the Reporter, the only one yet issued up to this present time of our writing, is not that which its editor would like to be received as a specimen of the character and merits of his Journal. With a strong *esprit du corps*, that always makes us pleased with the success of every laudable undertaking by our professional brethren, we cannot but wish that Dr. Collins had matured his plan a little more, and brought at once to its execution the aids and means which he promises for the future.

Good Clinical Reports are, one need not say, of great value; but, of late, the good quality of the thing is in the inverse ratio of its abundance, and too often the merest common phrases; slip-slop narrative and twaddle are inflicted on us in the shape of Clinical Reports and Clinical Lectures; or, if there have been some good points and leading truths to start with, they have become so hammered out by iteration, as to no longer serve a useful purpose.

The appointment of Surgeon to her Majesty's yacht, *William and Mary*, vacant by the retirement of Mr. Edwards, has been given by Lord Haddington to Mr. McCormick, the adventurer to both Poles, he having accompanied Sir Edward Parry to the North, and Sir James Clarke Ross to the South.

Died, on the 7th of August, Dr. R. Graham, late Professor of Botany in the University of Edinburgh, in the 59th year of his age. He filled the botanical chair in the University with great credit for a period of twenty-four years.

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VOL. III.]

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[No. 12.]

How far should Nature govern?

[Dr. Jackson, formerly of Northumberland, terminates "the Annual Report of the Theory and Practice of Medicine," before the College of Physicians of Philadelphia, in the following train of reflection and argument.]

WE shall conclude our paper, by reporting, for the animadversion of the College, a certain morbid opinion or theory, sometimes too freely expressed by physicians, and too well calculated to derogate from the honor and utility of medicine. It is, that *the physician is the mere servant of nature, which cures nearly all diseases*. This, we believe, is the prevailing and most injurious error of the present time, one which the people, the *idiotai*, as Hippocrates calls them, are too ready to cherish to their own detriment. An argument is founded on the fact that the physician is obliged to avail himself of all the natural functions, without whose subserviency, he can effect nothing. True, if the blood do not circulate he cannot bleed; if there is no peristaltic motion, he cannot purge. As well might they derogate from the value of the artist, who, without marble, cannot make a statue.

A form to rugged stone, when Phidias gives,

Beneath his touch a new creation lives;
Remove his marble, and his genius dies;

So also with the physician, — if there is no life, his art ceases. But to direct the living functions so as to prevent disease, recover lost health, and attain longevity, is all that medicine contem-

VOL. III.—34

plates, and this is what unassisted nature seldom does, in the best and safest manner; particularly as the word *NATURE* includes, not only the physical necessities of the body, but also the blind mental operations of the patient, and of the many who are injuriously interfering in his case. Your friend is ill; nature is doing for him precisely what she cannot help; it may be good, or it may be evil, the best or the worst; but there are other natures beside his own, and his sick body has not only to contend with its own nature, but with the obtruded natures of all his friends. Thus, the new-born child is no sooner consigned to his mother's arms, than the preservative art of Medicine is needed; for then all the busy *natures* in the house begin to inquire, whether they shall surfeit the stranger with sugar or molasses, pap or panada.

This nature has been used in the world under various imposing names. With Van Helmont, it was an *Archeus*, with Stahl, an *Anima Medica*, Cullen thought it a *Vis Medicatrix*, and many, from Hippocrates to the seventeenth century, dignified it by the name of *Autokrateia*. It has even been endowed with intelligence, but at present, it must be considered as the mere physiological necessity of organised matter. That must have been considered as a cruel and malicious intelligence, which could stir up such painful curative commotions as colic and dysentery.

In the whole catalogue of diseases, what does unassisted nature effect, in her methods of cure? In yellow fever, she inflames the stomach and creates a

fatal vomiting of black matter; in mild typhus, under a show of great gentleness, she insidiously involves the brain in inflammation or corrodes the bowels; in dysentery, under pretence of expelling offending matter, she ulcerates the bowels, adding intolerable pain, purging, and tenesmus; in the various choleras, it would take a longer time to describe her blind curative operations, than she requires to destroy the patient. In the ague, though she benevolently cure one fit, she brings on another, till she inflames the stomach and bowels, swells the liver, emaciates the patient, and finally consigns him to the undertaker, whether he be a King James, a Cromwell, or a commoner: in some diseases her curative methods are tedious, always deadly, and too disgusting to be related.

But many of her operations are salutary; when there is a thorn in your flesh, she excites suppuration and throws it out. True — but she makes the same effort when she cannot throw it out. All her operations are blind, yet she cannot be still; she has no alliance with the vaunted Hippocratic expectation. But when there is internal inflammation, she gives you timely notice by pain and fever. True — but it was nature that excited this inflammation as a curative effort, and the pain is a necessary part of it. She brings on syncope, and saves the life of a bleeding patient. Neither is this a *vis medicatrix*, but a physical necessity. Let us see a syncope with a restrained hemorrhage, while the pulse fails not — then, indeed, you may cry out, *euréka, euréka*.

Dr. Sydenham has defined disease to be the confused and irregular operations of debilitated and disordered nature; and Dr. Dickson, in his late work, says, that all the tendencies of disease are towards death. This we believe to be strictly true, though it be in collision with one of the highest authorities, who fears "that if the invariable tendency of all forms of disease was unto death, their mortality would be greatly augmented." The tendency, however, may be to death, though death be not reached; the mortiferous action wears itself out by its own struggle, and leaves the patient alive, though often unsound. In the various grades of dysentery, the curative operations of nature may sometimes save a patient, the organism to be destroyed, being stronger than nature, the destroyer; but let me insist that I have never known a regular physician so worthless that he was not greatly to be preferred to nature, in

nearly all cases, and certainly in his collective practice. In all diseases, from the prick of a thorn to the bite of a crotalus — from the mildest ephemera to the malignant plague, the regularly educated physician, however comparatively worthless, is greatly to be preferred to "the confused and irregular operations of disordered and debilitated nature." We would therefore propose to reverse the maxim, and say that *nature is the servant of the physician*. She is to be carefully observed, and, like a servant, she is to be encouraged, in all her laudable determinations; nay, further — like a servant, she must sometimes be tolerated even in her errors. The human body, in sickness, has been compared to a ship in a storm: *nature* is breaking her eordage, tearing her sails, and driving her on the rocks, — the mariners repair the rents, and by a skilful use of the morbid elements of *nature*, they steer her safe from the leeward shore.

It would appear obsolete to observe that the goodness of Providence is not to be questioned, because he has left the human body without a curative *autokrateia*. To have left many of those things most necessary to the comfort of man, particularly health, to be attained only by care and labour, is one proof of Supreme wisdom; for it is not consistent, either for our present or future happiness, to live like the gods of the Epicureans, in a state of careless ease and apathetic supineness, as Lucretius says — *curâ semota metuque*.

It has long been our opinion that mankind are not duly impressed with the value of medical science. How many feeble constitutions, particularly females, need support about their fourteenth year? how many in every period of life? but it is particularly in old age that exhausted nature calls loudly for succour. You see the old man — pale, dejected, and hopeless — stumbling precipitately down the hill of life, when iron and bark and Falernian wine, would not only ensure him a slower passage, but would enable him to enjoy the autumnal landscape, and even to pluck the flowers and fruits which abundantly embower his declining path, now gilded by the milder beams of his setting sun.

Let no one despair of the virtues of medical science; it is only through our intimate acquaintance with them, that they do not appear both manifold and marvellous — witness the astonishment excited by them among the Chinese, to whom they are novelties. If Hippocrates, who, by his

own account, lost nearly all his patients, and whose works appear to us so frivolous, was deeply revered for ages, what reverence is not due to that science which presides over health and life, in the nineteenth century? Let any man who is advanced in age, consider by what modes and means his numerous acquaintance have passed away; he will find that few of those who did not attain their threescore years and ten, were lost through any deficiency of medical science. There are the sudden deaths and the various accidents of life, over which physicians have no control, all those diseases, hereditary and acquired, which medicine, in its present state, hardly pretends to cure; war and famine; pestilential and slow consuming atmospheres; intemperance of the various passions, which silently create diseases never confessed; those harpies in human form, the homœopaths, who prey on human weakness and leave the seeds of future death in the vitals of their victims; the self-neglect of patients themselves, who, trusting to nature, seek the physician only when their case is hopeless; let me say again, that when an aged person considers the means and modes by which his various acquaintance have passed away, he will have very little reason to inculcate the science of medicine. On the other hand, let any physician, advanced in a life of reputable and busy practice, look back through the years of days and nights he has spent in the chamber of sickness, though he may see much that was unexpectedly unsuccessful, he will have, through the long vista of time, a most animating picture of his labours. I do not say that he shall arrogate praise to himself; on the contrary, should there be cause of reproach, it will cleave to himself or his patient—the glories of the picture will pertain to our Heavenly Science. — *Summary of the Transactions of the College of Physicians of Philadelphia, from May to October, 1845.*

PUBLIC HYGIENE. DURATION OF LIFE.*

DURING the last century, statistical researches have developed two extremely important facts, namely, that the mean dura-

tion of human life is generally less than half that of the threescore and ten years commonly assigned as the term of man's existence, but that, on the other hand, communities have it, to a certain degree, in their power to diminish the causes by which the lives of their members are thus abridged; and it has been made evident that, in consequence of the judicious employment of that power, the average duration of human life amongst us has been for many years slowly but progressively upon the increase.

There is no class of writings which are more substantially valuable, or which deserve to receive greater encouragement, than those which have reference to public health. The art of the physician may do much in curing disease in detail, but the power of the lawgiver, if well directed, may do infinitely more in adopting salutary measures, which must, if properly carried into effect, materially check the development of large classes of very serious maladies. It is most evidently a fact, that to mankind generally has been given the power of maintaining their own existence for a given period,—say, seventy years; but the accumulated ills of centuries have, in a great measure, prevented this power from being exercised by the individual;—thus no care or moderation on his own part can enable the sickly and half-starved offspring of an ill-fed and diseased race, living in a badly drained and pestilential district, to avoid altogether the assaults of the sickness by which he appears to be doomed to an early death; but the legislature possesses, to a certain extent, the means of averting from him this evil, and of almost freeing his descendants from the injurious influences under which he suffers. He has not the power of removing from the overpopulated district in which he lives, where the excessive accumulation of human beings, and the consequent impossibility of their receiving proper support, renders a high rate of mortality among them a merciful dispensation,—but the government may enable him to emigrate. He cannot avoid the pestilential exhalations of the unhealthy quarter in which his dwelling is situated,—but the municipal authorities may correct the evil. He must either work for an undue number of hours in a badly ventilated manufactory, or resolve to meet death by starvation,—but the law may compel his employers to place upon him no more labour than he is really able to bear, and to provide for the proper ven-

* On Certain Tests of a Thriving Population; Four Letters delivered before the University of Oxford, in Lent Term, 1845. By FRANCIS TWISS, D. C. L., F. R. S., Professor of Political Economy, &c. 8vo. pp. 107. London, 1845. Longman and Co.

tilation of the work-rooms in which he toils. He cannot, it is true, throw off the faults of constitution which have descended to him from his poorly nourished and intemperate forefathers, — but the legislature may (in providing that his remuneration shall be sufficient to enable him to procure wholesome food for himself and his family, and in great measure removing from him the temptation to the destructive use of spirituous liquors,) succeed in prolonging his life, and in rendering his progeny a comparatively healthy race.

In many of these particulars the government has long been endeavouring to remove the evils which tend so greatly to increase the rate of mortality in the whole population; and it may not be out of place to state some of the legislative measures which are obviously necessary for the diminution of the most prevalent causes of disease, and for the general prolongation of human life. The following appear to be the most requisite:—

The encouragement of emigration from over-populated districts to healthy colonies.

The embankment of rivers, and the draining and cultivation of marsh lands.

The infliction of heavy penalties upon all persons found guilty of adulterating any article of sustenance, or of selling putrid fish, or the flesh or milk of ill-fed or diseased animals.

The imposition of an increased tax upon ardent spirits, which should in effect be prohibitory to their sale.

The establishment of laws for —

The proper building and drainage of houses, particularly those of the labouring population.

The due remuneration of the working classes (especially in the manufacturing districts,) and the proper limitation of their hours of labour.

The clearing, regardless of opposition or expense, of all confined and unhealthy districts of cities, and the partition of the spaces of ground so cleared into lots, as the sites of proper dwellings for the poor.

The prohibition of the intramural burial of the dead.

The adoption, as far as practicable, of means for the consumption of the smoke of towns. The removal of all extensive manufactories to the distance of at least two miles from the confines of large cities, with the provisions of their being erected with proper regard to ventilation, and not in unhealthy situations.

The suppression of all those trades which, while they produce no real benefit to the community, entail almost certain destruction of health or life upon those who practise them.

The establishment upon a very extensive scale, throughout the country, of houses of temporary refuge for the destitute poor, where medical assistance may be received, and aid in obtaining proper employment.

The opening of baths and places of exercise for the use of the working classes in manufacturing districts.

The establishment of better and more liberal rules than are at present in operation for the medical relief of the destitute sick.

The adoption of measures encouraging the poor to bring their children to be vaccinated.

The gradual introduction of regulations calculated to improve the *morale* of populous districts.

The diffusion of religious instruction among all classes of people.

Some of these provisions have long been in active though partial operation, and their beneficial effects are daily becoming more and more strikingly apparent; others are just beginning to work, and will have to be much extended in their application before they can produce their intended good; the remainder, it is to be regretted, have yet to be employed; but the time is not far distant at which the absolute necessity for their adoption must become apparent to all. There is one great fact which should ever be borne in mind by legislators — that a large proportion of the most general and most fatal diseases are the results of circumstances which it is in the power of man to control, and perhaps eventually to remove altogether; and that this power of suppressing the main cause of disease lies in the hands rather of the lawgiver, than of the physician.

We have naturally been led to make these remarks from having before us a valuable work upon several points with reference to the duration of human life and the preservation of public health. Mr. Twiss's four lectures will be found to contain many facts and suggestions of great interest and importance to the statistician, the political economist, and the medical man. The author has employed much discriminating research and has certainly treated his subject in a very masterly manner.

We shall give a few examples of the arguments and facts contained in his work.

Mr. Twiss insists very justly upon the ambiguous meaning of the term "expectation of life, or *vie moyenne*," as it is employed to designate two very different results; the one arrived at from a calculation of the "mean age at death;" the other based upon the enumeration of the ages of the living. Several of the Illustrations of his views are very interesting; for example, he says —

"The mean age at death alone supplies the data for calculation in the case of certain Life Tables, whilst the ages of the living, out of whose number the deaths have occurred at the several periods of life, form the important element in the construction of others. But, 'the mean age of the living' in a country where the births far exceed in number the deaths, differs very widely from the 'mean age at death;' and the former may be increasing whilst the latter has been reduced. These have been so often erroneously confounded, that it is most desirable to distinguish carefully from each other the facts which they represent. It is a conceivable supposition, that the registers of two nations should exhibit the same number of births and deaths, yet that the efficiency of the respective populations should be very different. In the one case the mortality might mainly prevail amongst the adult population, in the other instance amongst the infant and youthful members: in the one case the best quality of lives will have been carried off, in the other they will have survived. The mean age of death will have augmented on the former of these suppositions: it will have decreased on the latter; whilst the mean age of the living will have varied inversely as the mean age at death." &c. (pp. 32, 33.)

Again:

"The probable duration of life in Surrey is 53 years; in the metropolis 40; in Liverpool 7 or 8 years. The mean duration of life does not differ so enormously; it is, however, 45 years in Surrey, 37 years in the metropolis, and only 26 years in Liverpool."

According to the same authority, the Registrar General's Fifth Report —

"The mean age at death in Surrey is 34 years; in the metropolis, 29 years, the same as the average mean age at death in England; whilst from a table in the First Report of the Health of Towns' Commission, it appears that 17 is the mean age at

death in Liverpool. There will therefore be a variation in the expectation of life, according as the life tables are calculated upon the mean age at death, or, upon the mean age of the living, of not less than 11 years in the case of Surrey, 8 years in that of the metropolis, and 9 years in that of Liverpool." [p. 57.]

The mention of the high rate of mortality in Liverpool leads us to make one or two other quotations, which involve facts bearing strongly upon the necessity for legislative measures to improve the dwellings of the poor, and the arrangements in their places of labour.

"The population of the extra-metropolitan parts of Surrey happens to be but little more than the population of Liverpool; yet in 1841, the deaths in Surrey were 4,256; the deaths in Liverpool, 7,556; out of 14,450 boys under five years of age, 2,087 died in Liverpool; of 14,045 boys in Surrey only 699 died within the same time. By this immense mortality in Liverpool, the number of males at the age of 10—15 is reduced much below the number in Surrey at a corresponding age. The living in Surrey aged 20—30 are 18,746, but the influx of the immigration into Liverpool raised the number of males living there at that age to 23,494, who are, however rapidly cut down by sickness or death (unless other accidental circumstances cause them to remove elsewhere;) so that at the age of 45—55 only 7,504 males were enumerated in Liverpool, whilst 9,281 were living in Surrey." (p. 55.)

"It is not always the want of employment which is fatal to the operative classes; it is sometimes the very employment itself, because that employment confines them during the whole day to close and ill-ventilated work rooms. Thus at Paisley. In May, 1832, during a period, when there was almost an entire cessation of work, and such universal distress, that the aid of Government was required to co-operate with private benevolence, the physicians of the Fever Hospital were surprised by the diminution of at least one-eighth in the average of fever cases, as compared with the previous five years. When, however, a time of brisk employment succeeded and the whole population were again at work, a new epidemic broke out. In Manchester a similar reduction in mortality was experienced in the years 1841 and 1843, which were years of great distress as contrasted with 1840. It seems from a

host of similar instances which are collected in various sanitary reports, to be a well ascertained fact, that the unfavourable effect of a reduction in the supply of food and clothing to our manufacturing population during a period of non-employment, in inducing disease is more than counterbalanced by the favourable effect of their absence from ill-ventilated workshops, and the accompanying want of means to gratify costly and hurtful propensities, whereby the causes of disease are diminished." (pp. 78, 79.)

The author says—

"We have trustworthy data to show that the rate of mortality has decreased during the last 100 years. Supposing the annual average baptisms in given periods to bear a given ratio to the respective population, and the returned burials to represent a similar constant proportion to the general deaths, we should be enabled to measure with sufficient accuracy the variation in mortality. It thus appears that, out of the same amount of population, whatever may have been that which corresponded in 1000 baptisms, there died annually in England and Wales—

| | | | | |
|------|---------|------|-----|-------|
| 1068 | between | 1720 | and | 1730 |
| 1043 | " | 1730 | " | 1740 |
| 924 | " | 1740 | " | 1750 |
| 858 | " | 1750 | " | 1760 |
| 840 | " | 1760 | " | 1770 |
| 857 | " | 1770 | " | 1780 |
| 787 | " | 1780 | " | 1790 |
| 747 | " | 1790 | " | 1800 |
| 699 | " | 1800 | " | 1805 |
| 659 | " | 1805 | " | 1810 |
| 612 | " | 1810 | " | 1815 |
| 623 | " | 1814 | " | 1820" |

— (pp. 50, 51.)

— a progressive decrease in the proportion of deaths which is very remarkable.

The sources of error which beset the inquiries of those who are employed in statistical researches are exceedingly numerous; and many of them, strikingly evident as they appear to be, when once clearly explained, are often entirely overlooked by the persons actually engaged in such investigations. Much fallacy may be removed by the cautions contained in such valuable commentaries as the one before us; and we conceive that the public is much indebted to Mr. Twiss for the important suggestions which he has embodied in these four lectures. — *Medical Gazette*.

England, during the whole of the present century, there have been more than three births to two deaths; and this result reduced the mean age of death to 33 years in 1831, and to 29 years in 1841: while the real duration of life, that is, the expectation of life, is 41 years, and has varied little. The number living to one death was 46 in 1841, and 45 in the preceding four years. — *Reg. Rep.* 1844.

CURIOUS CASE OF INSANITY.

The following very interesting and instructive case, from Dr. Wigan's work on the Duality of the Mind, was, we believe, first published in the "*Illuminated Magazine*," and was regarded by some as a fictitious story; but Dr. Wigan states that he knew the parties, and can vouch for the general accuracy of the narrative. — *Editor of Journal Insanity*.

A gentleman engaged in the higher departments of trade—a good man, and an affectionate parent—had two sons, who, at the time I begin their history, were respectively of the ages of five and ten. The attachment between them was so remarkable as to be the common topic of conversation among their friends and acquaintance. The children were together; and to see them walk round the garden, with the arm of the elder round the neck of the younger, while the other, who could not reach his neck, endeavoured to clasp his waist—with their long auburn hair, in the fashion of the day, hanging down in ringlets, and as the elder stooped to kiss his little brother covering his face, those who had seen them thus occupied, their lovely features beaming with affection, would have said, that nothing on earth could give a more vivid idea of angels.

The children when separated for a few hours were miserable; and when the time arrived for sending the elder to school, it was a subject of serious reflection with the parents and friends, whether so intense an affection should be checked or encouraged: the former was decided on, and the elder was sent to a dis-

eedingly

wasting of body, made every one fearful of the consequences of prolonging the absence, and they were brought together again. Those who witnessed the tumultuous joy of their meeting, describe it as inexpressibly affecting. They soon recovered their health and spirits, and their mutual affection seemed if possible to be increased by their temporary separation.

The experiment, after a while, was again made, with similar results; and it was decided never to risk another.

An arrangement was now entered into with a school-master to receive both boys, although contrary to the regulations of his establishment, which professed to admit none under ten years of age.

The two boys kept themselves almost entirely aloof from all the rest; the elder helped the younger in his education, watched him with a kind of parental solicitude, kept a vigilant eye upon the character of boys who sought his society, and admitted none to intimacy with his brother of whom he did not entirely approve. The slightest hint of his wish sufficed with the younger, who would almost as soon have contemplated deliberately breaking the Commandments, as opposing his wishes in the slightest degree.

Both made rapid progress in their education, and their parents' hearts were filled with thankfulness for the blessing.

In the midst of this happiness, news arrived from the school-master that, from some unexplained cause, the elder boy had begun to exercise a very unreasonable and tyrannical authority over the younger; that he had been repeatedly punished for it; but although he always promised amendment, and could assign no cause, reasonable or unreasonable, for his conduct, he soon relapsed into his usual habits, and the school-master requested to know what was to be done. The father immediately sent for both boys, and entered upon a lengthy investigation. The lit-

exclaimed, "He might beat me every day if he would but love me; but he hates me, and I shall never be happy again."

The elder could assign no reason for his animosity and ill-treatment: and the father, after many remonstrances, thought it right to inflict on him very severe corporeal chastisement, and confined him to his room for some days with nothing but bread and water. The lad on his liberation gave solemn promises of altered conduct, but showed little affection for his brother, although the latter used a thousand innocent stratagems to inspire him with tenderness. They returned to school. In a few days similar scenes and worse occurred; the boy was again and again punished by the master, again and again promised amendment, but in vain, and he was at last taken away from school by his father.

A repetition of severe punishment, long incarceration, and a rejection by all his relatives, had no effect in changing his disposition; his dislike to his brother became fixed animosity, and from animosity degenerated into the most deadly hatred: he made an attempt on the child's life; and if he saw him pass an open door, would throw a carving-knife at him with all the fury of a maniac.

The family now resorted to medical advice, and years passed in hopeless endeavours to remove a disposition obviously depending on a diseased brain. Had they taken this step earlier, these floggings and imprisonments would have been spared, as well as the heart-sickening remorse of the father.

Still the boy was not insane: on every topic but one he was reasonable, but torpid; it was only by the sight of his brother, or the sound of his name, that he was aroused to madness. The youth now advanced towards manhood. When about the age of fifteen he was taken with a violent but Platonic passion for a lady more than forty years of age, and the mother of five children, the eldest older than himself. His paroxysms

of fury now became frightful; he made several attempts to destroy himself; but in the very torrent and whirlwind of his rage, if this lady would allow him to sit at her feet and lay his head on her knee, he would burst into tears and go off into a sound sleep, wake up perfectly calm and composed, and looking up into her face with lack-lustre eye, would say, "Pity me; I can't help it."

Soon after this period he began to squint, and was rapidly passing into hopeless idiocy, when it was proposed by Mr. Cline to apply the trephine, and take away a piece of bone from the skull, in a place where there appeared to be a slight depression. "The indication is very vague," said he, "and we should not be justified in performing the operation but in a case in which we cannot do any harm; he must otherwise soon fall a sacrifice."

It was done, and from under the surface grew a long spicula of bone piercing the brain! He recovered, resumed his attachment to his brother, and became indifferent to the lady.

The disease which led to these terrible results had its origin in a blow on the head with the end of a round ruler—one of the gentle reprimands then so common with school-masters.

— Digitaline.*

M. Bouchardat, in his *Annuaire de Thérapeutique* for 1845, has given an interesting account of digitaline, the active principle of the digitalis purpurea discovered by MM. Homolle and Quevenne.

1st. *Process of extraction.*—One kilogramme of dried leaves of digitalis of the same year's growth, coarsely powdered, and previously moistened, is placed in a displacement apparatus, with carded cotton in the centre, and then treated with cold water, so as to obtain a concentrated solution. The liquids are immediately precipitated by a slight excess of the subacetate of lead, and thrown upon a filter. They pass

through limpid, and almost completely colourless. A solution of the carbonate of soda is then added until there is not any precipitate thrown down, and the filtered liquid is freed from the magnesia which it still retains by means of the ammoniacal phosphate. The filtered solution is again precipitated by an excess of tannin, and the precipitate collected on a filter is mixed, while yet moist, with one-fifth part of its weight of oxide of lead (litharge.) The soft paste which results, placed between ungummed papers, then dried at the stove, and powdered, is exhausted by concentrated alcohol in a displacement apparatus. The alcoholic solution, decolourised by means of animal charcoal, leaves, as a residuum of evaporation, a yellowish granular mass, which, washed with a little distilled water, drained, and redissolved by boiling alcohol, deposits on the sides of the capsule on evaporation, the digitaline in a nipple-like granular form. Drained and dried, the digitaline ought still to be twice washed with boiling concentrated æther, which separates from it, among other substances, a white crystalline matter, and traces of green matter and of the odorous principle.

2d. *Physical and chemical characters.*—Digitaline, obtained and purified by the process which has just been described, presents itself in the form of a white, inodorous powder, and of an excessively bitter taste, which is especially experienced in the fauces; it is capable of causing violent sneezing when it is disseminated in very small particles in the air. Scarcely soluble in cold water; rather more so in boiling water; it is dissolved, in all proportions, in weak or concentrated alcohol. Pure æther only dissolves traces of it, but the slightest addition of alcohol considerably increases its solvent power. Complete solution is effected by acid or alkali. It is not susceptible of being precipitated by the addition of...
the addition of...
the addition of...

* Dublin Medical Press.

the solution, diluted with water, becomes green, and flakes are separated. Concentrated nitric acid changes it to a yellow colour, and dissolves it, depriving it of its bitterness. Hydrochloric acid colours it green. Ammonia and caustic soda colour it a yellow-brown. It does not contain any nitrogen.

3d. *Physiological and therapeutic properties.* — MM. Homolle and Quevenne have found its action on the dermis denuded by a blister so irritating as to forbid, they conceive, its endermic use. From experiments on their own persons, MM. H. and Q. have found the action of the digitaline on the heart to be always manifest, and that it is commonly shown by a progressive diminution in the number of its pulsations, which have been lowered in some cases to 40, and generally to 50 or 55 in the minute. One of them could not take more than from four to six milligrammes (5-50ths to 6-50ths of a grain) in the four-and-twenty hours without the supervision of intolerance. This intolerance was evidenced by nausea, borborygmi, efforts at vomiting, then obstinate vomiting, continuing even after the digitaline has ceased to be exhibited. Inequality, irregularity, and intermittence of the pulse, have often been observed after the digitaline has been given for eight or ten days. Its influence on the circulation appears to continue for several days after its exhibition has ceased.

The phenomena observed with respect to the digestive functions have consisted in an increase of the appetite, soon followed by a dragging sensation at the stomach; then arise borborygmi, abdominal pains with disengagement of the intestinal gas, and constipation, followed in some cases by diarrhœa. The diuretic action has been very irregular, and the renal function has been sometimes diminished for a short time. They observed, as the phenomena resulting from its action on the nervous centres, cephalalgia, giddiness, muscular weakness, soon followed by general prostrations, gaping, shivering, and sometimes an uncomfortable degree of heat in the hands and feet. Sleep has not appeared to be influenced by the digitaline.

In a very serious case of aneurism of the aorta, complicated with pericarditis, the digitaline was used with an accompanying

panied by a considerable lowering of the pulse, which in forty-eight hours fell from 120 to 54 in a minute. The absorption of the infiltrated serosity was effected very rapidly, and the treatment proved successful. In two cases of pleurisy the diuretic action was evident, and the absorption of the effusion seemed to be hastened. In several cases of phthisis, digitaline diminished the frequency of the pulse and of the respiration, quieted the cough, increased the appetite, diminished the thirst, and arrested the diarrhœa. In cases of nervous palpitation, its action was variable, but often beneficial. In affections of the heart, with disease of the valves, causing a considerable disturbance in the hæmatosis and the circulation, with a feeble, tumultuous, unequal, irregular pulse, œdema, oppression, cough, and stasis of the venous blood, its action has always been useful. In two cases of acute affection of the heart — endocarditis with hypertrophy of the ventricles — it was injurious by increasing the impulse of the heart and the strength of its pulsations. Finally, in a case of pericarditis with effusion, it was evidently serviceable, by diminishing the frequency of the pulse and the oppression, by increasing the urinary secretion.

Digitaline is, in the first place, according to MM. H. and Q., a wonderful modifier of the central organ of circulation, regulating its disordered action, and bringing it back to the normal type, and nevertheless, singularly enough, disordering, by a prolonged administration or by excessive doses, that function which it renders irregular and intermittent.

MM. Bouchardat and Sandras have also instituted a number of experiments on digitaline, and it results from these experiments, they observe, "that digitaline is an *excessively active substance*, especially when it is pure. It acts with violence, not only when it is injected directly into the veins, but also when it is taken into the stomach. It singularly modifies the circulation, and is capable of irritating the digestive organs in a high degree when it is applied to them. These experiments, then, having sufficiently enlightened us as to the energy of the principle extracted from the leaves of the digitalis purpurea, we were next desirous to ascertain the results that might be expected from so powerful a remedy when given in proper doses. It was, above all, important to obtain a correct knowledge of the action of this poison on the circulation, at the same time avoiding to excite the irritation

which it is able to cause in the digestive apparatus. With this object in view, we prepared pills, containing a tenth of a grain of digitaline, by means of mucilage and marshmallow powder. We exhibited these pills to patients in whom a greater slowness of circulation might be useful, and whose state did not allow us to fear any injurious results from the use of an agent capable of irritating the digestive canal. In these conditions we have observed important modifications of the circulation. All our patients had a marked slowness of pulse. It was felt before the experiments were commenced; it was felt again five or six hours after the administration of one of the digitaline pills; and again the next morning. We found that the greatest depression of pulse took place in general some hours after the exhibition of the medicine. It was then found in several instances to be diminished in frequency to the extent of nearly one-half the normal condition; it was, however, very often only one-third or one-fourth. The next morning it became rather more frequent, but it always remained from ten to more beats below the normal pulse. For example: in a young epileptic girl, whose pulse, habitually unequal, varied from 80 to 120, we have frequently found it only 50 in the minute under the influence of digitaline. A man, fifty years of age, who had been several times the subject of apoplexy, and whose pulse was never higher than 48, several times had it reduced to 36. A woman, fifty years of age, phthisical to the last degree, and often troubled with hæmoptysis, with a pulse generally from 120 to 131, has had it fall to 96 or 94. A woman, in whom we were desirous to increase the urinary secretion; had the pulse reduced for several days from 120 to 128 beats, to 92, 88, or 85. In all these cases we found that the action of digitaline on the circulation was shown not only by a diminution of the frequency of the pulse, but also by its irregularity. This irregularity appeared to us to be of two kinds; the interval of the pulsations was unequal; this was the most remarkable irregularity; else the character of the pulse was altogether different, the pulsation being one while hard and very quick, at another hard and prolonged; it is sometimes soft at intervals, else it continually preserves that character. Almost all the cases which we have noticed have shown analogous results.

Only one of our patients mentioned any modification in the urinary secretion, and

we were not able to attribute that fact to any other appreciable cause than the exhibition of the medicine. But, besides this physiological phenomenon, there were others, of which it is important to take note. Several patients have complained of disorders of the senses, light-headedness, annoying dreams, and hallucinations. These phenomena always occur at the commencement of the toxic effects of digitaline. They were soon followed by more or less frequently repeated diarrhœa or bilious vomiting. When this has occurred, we have of course always stopped the use of the medicine; but in spite of all the precautions which could be adopted, the vomiting sometimes lasted for two or three days. The appetite was lost at the same time, and quietude and time were required to re-establish the digestive functions. The toxic effects of the digitaline were not generally produced at first; for the first two or three days it seemed as if the patient had not taken any thing out of the way; but suddenly, and without any previous warning, the effects of the ingested substance began to show themselves. The slowness of the pulse became then most marked. If its use be continued, the pulse becomes yet slower under its influence, but at the end of some hours it again becomes frequent, doubtlessly induced by the irritation of the digestive organs, which this singular body does not fail to produce.

En resumé, digitaline is one of the most active vegetable substances we are acquainted with. The attentive and sustained study of its effects on the circulation might furnish some useful indications for practice; but at present we believe it to be our duty rigorously to declare that it is an agent of exceeding energy, the action of which must be attentively supervised, its sudden toxic power being especially to be feared, notwithstanding the security in which the medical attendant is left for several days. Digitaline possesses exactly all the active properties of digitalis; this new substance may, therefore, be of service in all those diseases where digitalis has been employed with success, and the medical man always knows correctly the quantity of active principle which he employs.

4th. *Dose and mode of administration of digitaline.*—The dose and moderation of this most energetic; the greatest circumspection. molle and Quevenne from essays have found that four n of digitaline correspond, in reg

of action, to about eight grains of the powder of digitalis purpurea, prepared with the greatest care, and taken in a state of purity.

5th. *Pharmaceutical preparations*.—M.M. Homolle and Quevenne recommend the following preparations as the most convenient forms of administering digitaline:—

a. *Granules of digitaline*.—One gramme of digitaline, fifty grammes of white sugar, for a thousand granules, which are to be prepared in the same manner as the aniseed of Verdun. These granules, containing each a milligramme (one-fiftieth of a grain) of digitaline, may be exhibited in the dose of from four to six in the course of the twenty-four hours.

b. *Syrup of digitaline*.—Two grains of digitaline, 1500 grammes of simple syrup. The digitaline is to be dissolved in alcohol, and then added to the syrup. This syrup contains one milligramme of digitaline in every fifteen grammes of syrup. Dose, from four to six spoonfuls in the course of the day, pure, or, in a glassful of an appropriate infusion.

c. *Digitaline mixture*.—Five milligrammes of digitaline, 100 grammes of distilled lettuce water, twenty-five grammes of syrup of orange flowers. Dissolve the digitaline in a few drops of alcohol, and add the distilled water and the syrup. To be taken by spoonfuls in the four-and-twenty hours.
—*Phar. Med. Times*.

Clinical Lectures on Delirium Tremens.

(Delivered at University College Hospital.)

By Dr. C. J. B. WILLIAMS, F.R.S., &c.

Taken in Short-Hand by our own Reporter, and revised by the Professor himself.*

Case of Delirium Tremens.—On the nature of the disease, and its varieties—its connexion with want of sleep—with inanition—practical deductions.—Operation of alcoholic liquors on the nervous, vascular, and secreting systems—Varieties explained—Illustrative cases, and treatment.—Case treated with extract of Indian hemp—Recovery.—Case with albuminuria—Death.—Case treated with morphia, purgatives, and diuretics—Recovery.—Case treated with tartar emetic, calomel, opium, and diuretics—Recovery.—Case of maniacal delirium, treated by cupping, calomel and opium, blister, &c.—Temporary recovery—Subsequent insanity.

We have had several cases of delirium tremens lately, and I shall take this opportunity of making a few re-

marks on that disease in general, as well as the peculiarities which each case presented.

You will find stated pretty broadly in systematic works what are the characteristics of delirium tremens, and what is the treatment which is generally successful. But we must remember that systematic medicine is one thing, and clinical medicine another. It is not my part to say that systematic medicine is of no use; on the contrary, it is of very great service; but it is not every thing. It is impossible by systematic medicine to teach you all the phases of disease, and it is absolutely necessary to study it at the bed-side, in order to be aware of the varieties which it presents, and to be capable of treating it successfully—to meet these varieties, in fact, as you should do, by a corresponding variety in treatment.

Delirium tremens, both practically and pathologically considered, may be defined to be a disease of excitement of the nervous system, leading to exhaustion, and requiring the use of composing remedies,—at least, chiefly. You commonly find practical men talking very largely about the entire and complete efficacy which opium has in the treatment of this affection. Give plenty of opium, they say; give enough to put the patient to sleep, and you cure the disease. But in some cases, we have had to prove that this rule is far from being absolute. You have seen several cases in which opium has been given in large quantities, in quantities sufficient to produce sleep, and yet the disease has not been cured.

We will take the matter a little more nicely, and consider first of all what delirium tremens is. We will analyse it a little further than by merely saying that it is excitement with exhaustion. Sometimes the healing symptoms which characterise it are those of excitement of the nervous system, which prevent the rest of sleep to such a degree that ultimately the vital powers become exhausted. Sleep is intended as a means of restoring all the vital powers, and particularly supplying an additional force to the excito-motory power,

* Medical Gazette.

and the cause of want of sleep is a matter which has not been sufficiently attended to. Many morbid phenomena prove to us that the sensorial functions, the functions connected with the mind, and the voluntary powers, act in some degree as a balance to the functions of the nervous system connected with involuntary power. When the sensorial functions are greatly excited, excited to an excessive degree, the excitomotory functions become comparatively exhausted. On the other hand, where the involuntary excitomotory functions are excessively excited, as in convulsive attacks, the voluntary powers are in abeyance — there is a state of coma, stupor, or something approaching to it. The two cannot be in a state of continual excitement long together; the continued excitement of both leads to exhaustion of both, or one more than the other; and the great purpose of sleep is not only to refresh and to strengthen the sensorial functions, but for a certain time to suspend them altogether — that is, they are altogether suspended when sleep is perfect — when there is no dreaming. Sleep is designed not only for the purpose of restoring the sensorial powers, but doubtless to give increased temporary energy to the excitomotory powers. And what do we see in a state of tranquil sleep? In tranquil sleep the excitomotory function is that on which life mainly depends, it is that on which the respiratory movements hang, and were it to fail, sleep would become disturbed in consequence of the person being brought to the verge of asphyxia. I might illustrate this by a great number of cases — for example, cases in which sleep is imperfect. The whole nervous functions being exhausted, whether from mental excitement or bodily fatigue, or intoxication, what is the result? When a person is over-fatigued, he is too tired to sleep. The excitomotory function is exhausted as well as the other, and hence there is not strength enough to keep the respiratory action in energy sufficient for the comfort of the individual. The consequence is, he soon awakes, the sleep is disturbed, he starts with a feeling of night-mare, or oppression, and has to exert his voluntary muscles to supply by their movements what is wanting in the excitomotory function. This is the reason of imperfect sleep from over exhaustion.

But the excitement of the whole nervous system which exists in delirium tremens is not dependent alone on loss of sleep. In addition to continued irritation by the alco-

holic stimulus to which the nervous system has been subjected, another cause generally co-operates in these cases — that is, the absence of a sufficient amount of nutrition. Habitual drunkards are always tottering, but they do not eat; they have no appetite, no powers of digestion; and the consequence is, that while they are in a state of continued intoxication, they are in a state of perpetual starvation. Inanition is induced, another cause of the exhaustion of the bodily powers generally, and of excitement of the nervous function in particular. It is well known that in all cases of inanition the bodily powers are depressed, but the nervous function is the last thus to suffer; it remains excited, in fact, in the midst of a general state of depression, as we see in cases of continued starvation, privation of food, and exhaustion from other causes. In excessive loss of blood, or drains of other kinds which exhaust extremely, we find that the nervous system remains excited even in the midst of weakness. These things have been illustrated by the experiments of Chossat on inanition, which show that the nervous system in these cases is not only the last to suffer in function, but the last also to suffer in structure, and the last to lose weight when animals are starved to death.

Now we know that this cause operates in the case of habitual drunkards; we know that they do not eat, from a want of relish, consequently that they are in a state with regard to the nutrition of the system approaching to starvation. This is another reason why exhaustion ensues. This view of the matter introduces us to another peculiarity of delirium tremens, and suggests to us another indication in the treatment in ordinary cases.

The indications of treatment are threefold. First, to compose that undue excitement of the nervous system which prevails, and which is exhausting the other powers. This is done by opium and other narcotics. Secondly, to support those functions which are failing, and which have been already so much exhausted that life may be in jeopardy. Although sleep is needed, yet strength is required to support life, and although sleep be obtained, perhaps the excitomotory function may be exhausted so low, that it may prove the sleep of death — it may be a reduction to a state of sinking. Under such circumstances — and they often occur in extreme cases of exhaustion in connexion with delirium tremens — it becomes a little leading indica-

tion to support the system by stimulants, and food if possible. But there is a third indication which should never be lost sight of in the treatment of delirium tremens; that is, to purify the system from the poison that is in it. If it be a case of recent *debauch*, there is an alcoholic stimulant in the system, and the longer it remains there the more mischief it will do. And in these cases there are other poisons besides the alcoholic stimulant. The body is a source of poison to itself, and if the vital powers are greatly reduced in their energy, the process of self-purification will not go on; the excretory functions are imperfectly performed; the urine is no longer freely secreted; urea, which is a poison in itself, accumulates; the bile probably accumulates in like manner, and the result of this in an extreme degree is to cause a poisoning of the system. It may not operate in such a violent manner as to lead us to say that the system is overwhelmed by the poison, but it contributes its influence. The cases I have to read will illustrate this point, showing that as long as the excretions are defective the nervous excitement continues; or the patient remains in a state of exhaustion, and there is an imperfect performance of the other functions. It is therefore a leading object to *purify the system by means of an increase of the secretions*, and this is generally done practically by means of purgative and diuretic remedies. This is the systematic treatment of delirium tremens explained in its principles.

But now we come to clinical varieties of this affection — to cases, as we meet with them in practice; and nothing is so good a guide to our understanding this subject, and, after understanding it, to our treatment, as a proper view of the *modus operandi* of the cause of the disease — that is, its true pathology.

Intoxicating liquors, I have stated before, produce excitement of the nervous system; but that is not their simple effect. Perhaps I may appeal to the experience of some who are present, who know what the operation of intoxicating liquors is; and although such experience is to be deprecated, yet we shall draw good out of evil, if evil has happened, taking a lesson from the past (without the need of repeating the experiment), to enlighten our minds for the good of others.

Intoxicating liquors affect three systems in particular — the nervous, the vascular, and the secreting.

The effect of these liquors on the nervous

system is, in the first place, stimulant and narcotic; and I must beg you to observe that these two effects vary considerably in different individuals, and in the same individual under different circumstances. With many persons they produce a state of wildness, excessive excitement, and that excitement not followed by any perceptible sopor or tendency to sleep. I have known many such cases in persons of nervous temperament, particularly excitable females; there no sleep ensues, and as might be expected, the consequence in such cases is more pernicious, leads to more disturbance and exhaustion. But in most instances the secondary operation of intoxicating liquors is decidedly narcotic. In most instances, a large dose of intoxicating liquors will speedily plunge a person into a state of sopor or coma; and if it be excessive, that coma may be fatal. But short of this, we hear the familiar expression, that a good glass of brandy and water, or *negus*, or any thing of that kind, is a very comfortable *night cap*, and many get into the habit of taking it every night to promote sleep. With many, it has more that effect than any other; but it has that effect peculiarly in some states of the system, as after fatigue and exhaustion — when the fatigue and exhaustion are too much for sleep. Then a glass of brandy and water, something stiff, will prove a comfortable *quietus* — a night-cap. This illustrates the different operations of intoxicating liquors on the nervous system; I have already mentioned that they act in different ways on various parts of that system, but I have not time to dwell on that point.

But intoxicating liquors also act on the vascular system. Here their effect is twofold: In the first place, it is stimulant, producing excitement, increased action of the heart, strong pulse, quickened circulation. They cause an increased glow and activity of circulation, perhaps by a direct influence on the production of animal heat; and indeed the result may be called directly stimulant. Then the subsequent effect is that of exhaustion. The exhaustion of the vascular system produced by these liquors is in the ratio of the previous excitement. That is not the case with regard to the nervous system. The vascular system passes into a state of weakness in proportion to the degree in which it was previously excited. If this be excessive, there is great weakness of pulse, and other symptoms of vascular debility. This element of the operation of intoxicating liquors

is furnished in different degrees by different individuals. The excitement will be greatest in a person of a sanguine temperament. If there be any disposition to excitement of the brain, or the heart, or any other part connected with the vascular system, these parts may, under these circumstances, suffer from excitement, and as the result of it, inflammation may be induced. We find accordingly that inflammation of various organs sometimes arises directly from the stimulating influence of intoxicating liquors. Bear that in mind with regard to the brain. The brain is one of the organs which is the first to suffer; and phrenitis, inflammation of the brain, or meningitis, inflammation of the membranes of the brain, and indeed every variety of inflammation of this organ, has been produced directly by intoxicating liquors. On the other hand, the weakness which follows this excitement is more likely to take place in persons of phlegmatic temperament.

Thirdly, intoxicating liquors operate on the secreting system. I have separated this from the vascular system, for the effect produced on that is not always proportioned to the excitement produced on this. Very different effects are apt to result from the disproportion between the two. The result of excitement on the secretion of the liver, the intestinal surface, the kidneys, and all other secretory organs, is to produce an increased flow; and this is exhibited also in various degrees in different individuals. It is well known that some cannot drink any amount of intoxicating liquor without the kidneys being excited to an extreme degree, and acting very freely under it. These are the persons with whom such liquors produce least mischief. There can be no doubt at all that the secreting system is a safety valve for this as for other poisons. So long as this safety valve is free, the increased stimulus and other injurious effects can be carried off by it, and so far the mischief resulting from them may with regard to this element be but small. But what is the effect of the continued excitement of the secreting system? It is exhaustion. You cannot go on stimulating a secreting organ long without fatiguing it, if I may use the expression. There is a certain amount of vital power appropriated to each structure, and if the structure be taxed beyond that power, it fails in function, and consequently the function ceases, or is more or less impaired. What is the result? The failure of the secreting function, to the

value of which I just now alluded. This failure acts as a blockade to the system, stopping up all the channels by which the system is freed from poisons, extraneous or intrinsic. This we find occurring in the long run in habitual drunkards. Although their secreting organs may serve them long, and save them from many evils — and the longer they serve them, the longer they can save them — yet, by and by, they get tired and worn out, their function and structure suffer, and then comes the tide of evils which close the scene of the lives of drunkards. You know what they are — cachectic diseases of various kinds, dropsy in particular, degenerations of structure, and a host of other affections, of which gout, rheumatism, gravel, and similar disorders, may be considered the slighter degrees.

If you consider that all these elements are concerned, are really part and parcel of the operation of alcoholic liquors, you cannot wonder at the clinical varieties presented in the different forms of the drunkard's disease. I think this will be enough to show that no one rule can be absolute with regard to the treatment. But it is enough to show more than this, and I should not have taken up your time with what may appear over refinement, if there were no practical rules arising out of this analysis. In fact, in different circumstances alcoholic stimulants produce these various effects in different degrees. These different results are exaggerated by the indulgence being habitual. The effects accumulate, and if the nervous system is excessively excited, the vascular system becomes excessively exhausted, and the secreting function considerably impaired. If that takes place at each debauch, a succession of them will increase all these effects, and produce as the result the most aggravated form of delirium tremens. On the other hand, in the young and healthier novice in excesses, the vascular system may become more excited than the nervous system, and inflammation of the brain, or something bordering on it, may result, with different tendencies, and requiring different treatment. Again, in both these classes of cases, their severity and intractability will much depend on the extent to which the secretory and nutritive functions are impaired, and attention to these must be duly included in the treatment. Thus many and important varieties, which defy our definitions when we attempt to reduce them to nosological arrangement, become intelli-

gible and tractable when we analyse the elements of the disease, and consider the mode in which it has been produced.

Let us take the cases in illustration, some of which I will quote from memory. One occurred some time ago in D. W., aged 51, admitted on the 25th of February, and discharged cured on the 15th of March. It was the case of an old drunkard, who carried his vocation in his face—the face that Shakspeare has so well described; I am not going to quote him, but I shall define it more technically by saying that he had a face red with aene rosacea and tuberculata; bleary eyes; the heavy stupid look of a sot; general tremor of the body; great weakness and exhaustion; lowness of spirits, with disturbed sleep, and horrible dreams. His was not a case where the nervous cerebral or vascular excitement was high; the former existed, but in low degree; the latter had passed into a state of exhaustion. The secreting functions were deficient, particularly that of the liver, and required extra treatment besides that ordinarily employed for delirium tremens, and which I shall mention by and by. The nutritive function was particularly defective; he had taken scarcely any food, and the weakness of the vascular function might be partly attributable to that. Holding that in view, as well as the indication to give more tranquil sleep, I sought for him a composing medicine which should not impair his appetite; and instead of giving him opium in the day time, I exhibited the extract of Indian hemp, the peculiar operation of which is, that it acts as a soporific without impairing, but rather increasing, the appetite. It is a valuable medicine for this purpose, and was the chief remedy under which he recovered. He had two or three doses of opium, but they were confined to the night, so that they should not interfere with the digestive functions during the day. He soon lost the tremor and nervous symptoms, and would have been discharged sooner, but he was kept in on account of the great tenderness and enlargement of the liver, which required the exhibition of mercury and other medicines to increase its secretions for some time afterwards.

The second case is that of Joseph Mayhew, on which I have already commented, and shall not dwell. It was delirium tremens combined with albuminuria. In a former lecture I expressed my conviction that the extreme exhaustion he exhibited was the result not only of the alcoholic

stimulant, but of a poisoning of the blood from the diseased condition of the kidneys. The latter affection I had no hesitation in ascribing to the previous operation of alcoholic stimulants, combined probably with cold, but the effect of the two together was such as to reduce him to an extreme state, and he died shortly after his admission.

The next is the case of J. D., admitted May 17th, aged 30. He is a surgeon. It appears that he was a confirmed drunkard, although young. "Eyes injected and weak; countenance of an unhealthy livid red colour. His history from the time he entered Trinity College, Dublin, to the present, reveals a course of life of the most debauched and dissipated character. He lived hard when a student, drinking indiscriminately alcoholic and malt liquors. Having taken his degree at Dublin" — (a degree in the art of drinking, one would suppose) — "he went abroad, first to India, then to China, where he remained for about three years. During this time he lived the same kind of life; his drink was chiefly brandy, but he also contracted the habit of taking laudanum and smoking opium to some extent. He suffered from gonorrhœa and syphilis at various times, and from the secondary symptoms of the latter disease. He returned about three years since, and has been residing in London up to the present time, following no employment, and leading the same sort of life as when abroad. While in London his drink has been principally gin. He has never had an attack of delirium tremens until the present, but during the last fortnight he has been more than usually nervous, and his hands have been more unsteady. This he attributes in a good measure to anxiety produced by family circumstances, and also to the interference of a third person with a female with whom he had been living. His nights have been restless, and his sleep disturbed by frightful dreams. On Saturday morning last he was unusually anxious and nervous, and resorted to his usual remedy — gin. He continued during the day drinking, and towards the evening, when nearly intoxicated, he took five or six glasses of gin rapidly in succession." That was the finishing stroke — the dose that at once threw him into disease, overwhelming him by its poisonous influence. "Feeling unwell he went into the air, and soon began to experience a wildness, swimming in the head, and becoming unconscious he was brought to the hospital. When admitted

he was quite delirious; countenance expresses great excitement and alarm; head feels hot; pulse rapid and small; skin bedewed with perspiration; tongue furred and moist. He has stricture of the urethra, and the house-surgeon used a catheter, and drew off a good quantity of urine somewhat tinged with blood, and containing some albumen." This was most likely connected with the stricture.

This was a case of delirium tremens accompanied by more than usual excitement from excess; I do not know what to call it; his constant habit was that of continued excess—this was extra excess. He was given morphia twice before I saw him, which was on the 18th, when the report is:—"He has passed a bad night, being quite delirious; the other patients describe him as having been furions. No mechanical restraint was used. He is less excited this morning, but still talks incoherently; bowels not much opened, tongue furred, pulse weak, and rapid."

This, however, was not a state of exhaustion; his delirium was still of an excited phrenitic kind, not amounting to inflammation, but one of considerable excitement, and that probably from the remaining effect of the alcoholic stimulant in which he had indulged the day before. He was then given large doses of laudanum, and a saline draught was added, with a view to increase the secretion of the kidneys, hoping thereby to get rid of the poison. He was also given the *Haustus Sennæ* to fulfil the same object, the bowels not having been freely opened.

The report on the next day is:—"He feels better, but his memory still fails him; skin moist; pulse 72, weak:"—reduced in frequency. "The past night was troubled with frightful dreams; complains of headache; urine abundant, but bloody:"—that was from the stricture. "Bowels freely opened. To have ordinary diet." Then, with a view to act on the secretions, now that sleep had been procured, he was given calomel with conium. The result was:—"He sleeps better; dreams less troublesome; feels very weak; pulse 70, small. After this he was put on a light tonic and improved diet, and his convalescence took place rapidly. He was sent to the surgeon afterwards, to be treated for the stricture, and has been free from delirium since.

The next case is that of G. H., aged 26, admitted May 28th, a veterinary surgeon, of tall stature, and stout conformation;

sanguine temperament, and his health very good formerly, although now his countenance is rather bloated. Has lived in Ireland with his friends, and led a steady sober life, till about six years ago, when he contracted wild habits, and kept bad company, frequently riding steeple-chases, and being often drunk with whisky. Three years since he came to pursue his studies at the Veterinary College, London: he continued to lead the same kind of life. This is not the life of a student; I hope you will draw a moral lesson from this description: it will serve to teach not only a lesson in physic. "He says, it is not unusual for him to be in a state of intoxication for three or four days successively, and then intermitting for a time. His drink has been malt liquors and gin,—principally the latter; and he has scarcely taken any food." Here is the usual concomitant of intemperance—starvation; and that matter has not been sufficiently considered. It is one of the prominent features of the system of gin-drinking; the mischief results not only from alcoholic drink, but from privation of food. Sometimes amongst the poor wretches in a state of almost destitution it is a kind of excuse with them that they can, as they say, get more comfort from a pennyworth or two pennyworth of gin than from the same worth of bread. But I need not say in what a degraded state must both mind and body be to have such a perversion of tastes and appetite. "He has lately had several attacks of confusion of intellect and trembling of the hands, which have usually come on after a debauch, and which he easily dispelled by having recourse to the usual stimulant. Three months ago he was taken in one of these attacks to the Middlesex Hospital in a state bordering on paralysis, his mouth being drawn on one side." Here is an illustration of another effect of intoxicating liquors. This is not delirium tremens; it has nothing to do with it; but intoxicating liquors disturb the circulation in the head, at one time producing a state bordering on inflammation; at another time congestion, and consequent paralysis. How was he treated, then? "He recovered after being cupped behind the ears." There was congestion that required that treatment, although this was induced by the same influence that afterwards caused delirium tremens." He commenced drinking again on Monday last, and he has continued in a half intoxicated state ever since, taking little or no food, and getting scarcely any sleep. The day

before admission his stomach became irritable, and he vomited whatever he took. His hands became unsteady, but he resorted to his usual remedy. His nerves had become worse to-day (May 28th), and towards the afternoon he had what he calls a queer sensation, and confusion of intellect, and was admitted into the hospital in a state of inebriation, with a quick small pulse; considerable heat of head; confusion of ideas; skin moist; tongue covered with a thick brown coat; appetite bad; bowels not relaxed; not much tremor of the hands. 29th. Passed a very restless night, starting up with frightful dreams the moment he fell asleep: feels a wandering at times in the head, but he answers questions quite readily and rationally; pulse 118, and weak; feels very languid; tongue the same; skin hot and moist; great thirst; urine slightly albuminous." There was no stricture here. The albumen was one indication of failure of the secreting functions, and it is by no means an uncommon one. If the kidneys be overtaxed by continued excess, the excitement leaves congestion, and you know that I entertain the notion that congestion of the kidneys is the common cause of albuminuria. In this case it soon passed off as the kidneys recovered. "The urine is natural in colour; forty-eight ounces passed in the night; deposita shreds of tenacious fibrinous matter"—that is a result of the same congestion—"specific gravity 1014"—that is low under these circumstances—"bowels confined."

This was a case of delirium tremens with a good deal of excitement of a vehement kind, obviously requiring a combination of treatment; not only opium, but other remedies also, to augment the secretions. There did not appear to be exhaustion enough at that time to require stimulants; but afterwards, when the nervous symptoms became more intense, and the pulse became weaker, I considered that a stimulant was needed, and he was given æther with the opium. The treatment first adopted was calomel and opium, and afterwards opium and camphor. The Haustus Sennæ was likewise given, and repeated several times. I have not time to read all the reports; but for two or three days he was somewhat better: then he became very much worse again. There was an increase of the delirium, not accompanied by tremor, but more of the character of maniacal excitement; the pulse, however, was very weak. I thought to fulfil two objects at the same time, by giving at night a draught

of æther and laudanum, and continuing a mixture through the day containing small doses of tartar emetic and liq. opii sedativus with nitre; this, however, did not appear to answer; and opium was again given in a very considerable quantity. But his phrensy continued to increase, and in fact bordered on inflammatory excitement. On the 1st of June it is stated "that he had been in a state of furious delirium the whole night, starting, shouting continually, and at one time he became livid in the face. This, however, soon passed off. This morning his countenance is very wild and flushed; pupils contracted, tongue and mouth dry." That is not the character of delirium tremens. "Head very hot; pulse rapid and small; the bowels were not sufficiently open."

In this state I had very considerable doubt whether he ought not to be bled; but his pulse was still weak, and I thought it very likely that by a further increase of the secretions, by aid of calomel and antimony, and by the application of cold to the head, this attack might be subdued. He was given accordingly six grains of calomel, one grain of opium, and half a grain of tartarised antimony. It was to be repeated in six hours, and cold to be applied to the head. The result was, that "he had several hours' sleep during the night, and this morning he is quite conscious and rational; face still flushed; pupils less contracted. The urine was still scanty in quantity, but of high specific gravity." He was given croton oil, and ordered to keep up the cold application to the head. On the 3d the report is, that he had slept well during the night; that he was much better; and now the urine was more abundant and paler, the specific gravity 1028. The subsequent reports show that he rapidly got better.

Here the delirium was in a great degree removed by opium and purgatives; but on the secretions becoming defective, it recurred again in spite of opium, and of opium combined with æther; but by repeated purgatives and diuretics, and using cold to the head, it was again carried off, and it did not return again when once the urine was rendered quite free.

I have not time to read the case of James Upton, a patient who is still in the house; but I refer you to his case in the book as another illustration of the phases the disease presents. He was better after the first few days' treatment, but he went back, and at last became furiously delirious. The violence that took place was obviously con-

nected with such a determination of blood to the head, that it warranted blood-letting. Although the opium reduced the delirium at first, it did not subsequently. I ordered the head to be shaved, and a blister applied to the nucha; and he became immediately much better; but he is still somewhat incoherent, showing that the functions of the brain are not entirely restored. I think it probable that a state bordering on inflammatory action has been produced, and which may leave the mind in a disordered state for some time.

[This patient afterwards improved, and having been free from illusions for several days, was discharged June 28th. A fortnight after, he became insane, and was taken to an asylum.]

ILLUSTRATIONS OF ULCERATION OF THE CERVIX UTERI.

By J. HENRY BENNETT, M. D., Licentiate of the Royal College of Physicians, London, &c., &c.

The following cases of ulceration of the cervix uteri, which I have lately attended, admirably illustrate the principles laid down in my recent "Treatise;" and will, I think, be read with interest. I am induced to give them publicity, not only because they are good instances of a form of disease hitherto imperfectly described even by the continental pathologists, who have paid the most attention to it, but also because they will tend to prove that an objection which has been urged against the views and assertions contained in my late work, is perfectly groundless. It has been repeatedly stated to me seriously, that the description which I have given of uterine ulceration, and of its frequency, may apply to France, where my researches were principally prosecuted, but that it does not apply to England. The objection is most unphilosophical, and most unfounded. A disease, the existence and frequency of which is owing, as I have shown, to anatomical and physiological peculiarities, the same in all women, cannot be extremely common in one country, and extremely rare in another. Nor is it so. Since the publication of my work, I

have had considerable opportunities for investigations in dispensary practice and otherwise, and have found uterine pathology to be exactly the same, in this respect, in London, as it is in Paris. I have also received the confirmatory testimony of many of our most eminent uterine pathologists, and have no doubt that before very long the views which I have advocated will be universally admitted. When this is the case, much suffering will be spared to humanity, as the following facts will tend to prove:—

CASE I.—*Ulceration of the cervix in a married woman without family, of seven years' standing, treated by cauterisation, &c.—Cure.*

On the 26th of May, 1845, I was consulted by Mrs. A——, aged 28. She was married at 20, but had never conceived. Previous to her marriage her health was good, although she had always been of a delicate, and of rather nervous temperament. She had been regularly menstruated since the age of 17. Soon after marriage, she was attacked with leucorrhœa, accompanied by hypogastric and lumbar pains, palpitations, cardialgia, slight hysterical symptoms, and painful menstruation. These phenomena were soon followed by general weakness, from which she never perfectly recovered, although at times much better. As her state was considered by her medical attendants to be merely one of general debility, iron, quinine, wine, and other tonics, were administered internally. On their failing, she was ordered, at various epochs, to try the effects of a residence at our inland and seaside watering places, and subsequently sent to the continent to travel. Notwithstanding these measures, the leucorrhœa persisted, generally merely purulent, but sometimes tinged with blood; increasing or diminishing according to circumstances, and according to the state of the general health; the latter was generally ameliorated for a time by a change of treatment, or by travelling. Suspecting from the above account, chronic ulceration of the cervix uteri, I explained the necessity of further examination; on practising the toucher, I found the cervix rather voluminous, prominent, resistant, but not offering the deep hardness of chronic induration; the lips of the os were open, so as to admit the ex-

tremity of the index, soft and velvety, and there was slight superficial induration: on introducing the speculum, the internal surface of the labiæ nymphae and vagina was found deeply congested, of an intense blood-red colour, and covered with an abundant mucoso-purulent discharge. The redness of the more external genital organs was very much more vivid than is usually the case, and seemed to be as much the result of extreme congestion as of inflammation; there was little or no increase of the natural heat or sensibility. The cervix was voluminous, especially the anterior lip, scarcely entering a middle sized speculum, slightly retroverted, and presented an ulceration of the size of a shilling, penetrating into the cavity of the os, and covered with fungous bleeding granulations. The surrounding mucous membrane was of a blood-red hue, varicose, and spongy; there was a copious mucoso-purulent discharge covering the cervix, and occupying the vaginal cul de sac, inferiorly, which had to be wiped away before the cervix could be examined. The general symptoms enumerated above were all present; in addition the complexion was rather sallow, the appetite bad, and the bowels inactive. The patient complained of weakness, irritability, and lowness of spirits; and stated that menstruation was often painful, and scanty, and frequently returned two or three times in the month; this, no doubt, was merely slight hæmorrhage from the ulcerated surface, which she mistook for the menstrual flux. After fatigue she had a slight sensation of pelvic heaviness. I cauterised the ulcerated cervix with the solid nitrate of silver, which I also pushed up the os uteri; injections, with a solution of sulphate of zinc (one drachm to a pint of water,) were ordered three times a day, and rest, in the horizontal position, on a sofa, enjoined. Internally I prescribed half a drachm of the sesqui-oxide of iron, to be taken every day, in two doses, and a five grain pill of aloes cum myrrha every other night at bed time.

May 30th — Much the same; the coloration of the cervix and vagina perhaps a little less livid, but the mucous membrane still humid, varicose, and the ulceration covered with fungous granulations. She had what she called a show during the day which followed the cauterisation. The application of caustics to an ulcerated surface, I may remark, is often followed by the oozing of a little blood. She

thought the pills did not agree with her; they were therefore suspended. As it was evident that the nitrate of silver was not a sufficiently powerful agent to modify the irritability of the ulceration, I cauterised it deeply with the acid nitrate of mercury; little or no pain was experienced.

June 4th — The eschar had not completely fallen; the leucorrhœa had diminished in quantity; the lumbar pains were less intense; the mucous membrane of the cervix had lost its varicose congested appearance; and where the eschar had fallen, were seen, healthy, florid granulations; the latter surfaces were touched with the nitrate of silver. Same treatment; viz. rest, astringent injections; iron, internally; and, in addition, tepid, or nearly cold-hip-baths, for 15 minutes, night and morning. Diet to be light and nourishing. Not feeling any pain, and the leucorrhœa being diminished, she thought she was cured; and I had some trouble to induce her to continue the treatment.

9th. — Nymphae and vagina no longer livid and congested, but of a natural rosy hue; mucoso-purulent secretion much diminished; the cervix much less in size; it enters the speculum easily; ulcerated surfaces covered with small healthy granulations; has been menstruated during the week; flux perfectly easy, and more abundant than usual; no pains any where; general health much improved; ulceration again cauterised with the nitrate of mercury; injections with the acetate of lead, instead of the sulphate of zinc; iron internally; an opening powder of sulphate of magnesia $\mathfrak{z}\text{ii}$, carbonate of magnesia, $\mathfrak{z}\text{ss}$, to be taken once or twice a week.

July 3^d. — Has been cauterised every week, either with the nitrate of mercury or lunar caustic, and with gradual improvement; to-day the ulceration is all but healed; the congestion of the cervix has entirely disappeared, and it enters the smallest circular speculum; the mucous membrane is of a natural hue; the leucorrhœal secretion is but slight, and instead of being nearly entirely purulent, as at first, is, in a great measure, mucous (transparent, and viscid;) she experiences no pain whatever; menstruation has just taken place, easily and abundantly; the ulceration was again cauterised with the acid, and she was allowed to go into the country for a fortnight, being recommended to persevere with the original injections, hip-baths, occasionally laxatives, &c.

On the 22^d, she returned to town to be

examined. She stated that a week after she had left, all leucorrhœal discharge had ceased; the external and internal mucous surfaces were found healthy, and the cervix perfectly cicatrised, of a white rosy hue; the os free and open; she felt perfectly well; had no pains in any part of the body, and had gained strength; the palpitations and dyspeptic symptoms had disappeared; the tongue was clean; the appetite good; and the bowels acted freely. I told her to continue cold water injections for a month, but to suspend all other treatment, as she might consider herself cured. I also recommended sea-bathing, exercise, and a generous diet.

Remarks. — The case is one of the most interesting that I have met with, and tends strongly to corroborate my views with regard to the importance of distinguishing inflammation of the cervix in women who have not conceived from the same affection in women who have. The disease with Mrs. A — was evidently the result of marriage, and, not having been recognised or treated, persisted for seven years, rendering her life perfectly miserable. The palpitations, cardialgia, pains in the loins, and all the other symptoms (including the purulent vaginal discharge,) were considered merely indications of general debility; a state of the economy, I may remark, which seldom exists without some tangible cause in the shape of a lesion of the solids, or of the fluids. As might have been anticipated, the tonic medication pursued by her medical attendants was vain, as long as the local inflammation was unrecognised, and consequently allowed to perpetuate itself. A very peculiar feature in this case is the extent of the congestion and subacute inflammation of the mucous surface of the entire uterine system, from the labiæ to the cervix. The uterus itself was, no doubt, in the same state of morbid congestion, as evidenced by the habitual dysmenorrhœa. It will be remarked that the treatment pursued, which was very quickly successful, restoring the patient to health in the course of a few weeks, was nearly entirely local. The irritability of the unhealthy ulcerated cervix, having been subdued by the action of energetic, but superficial cauterisation, the congestion disappeared, menstruation became easy, and the leucorrhœal discharge diminished, ceasing entirely when cicatrization had taken place. In the mean time, the depressing and wasting influence of a serious local disease being subtracted, the general health rallied. The recovery of

strength and spirits, the nearly total disappearance of all dyspeptic and nervous symptoms in so short a time, can only be accounted for on this ground; the iron and slight laxatives which were given, can only be considered adjuvants, and were, in reality, merely administered as such. I am, indeed, firmly convinced, that my patient would have recovered her health nearly as rapidly, had the local treatment and general hygiene measures alone been resorted to. In this case, although the disease lasted so many years, the uterus being in the state in which it is previous to conception, there was no deep-seated hypertrophy, or induration of the cervix, and consequently, no prolapsus, or retroversion. The nearly total absence of spinal nerves in the cervix, and their paucity in the body of the uterus, accounts, as I have repeatedly stated, in the most satisfactory manner, for the slightness of the local pains, and for the obscurity of the symptoms in general.

The above case is a striking illustration of the pathological fact, which I cannot too often repeat, that a serious and extensive inflammatory ulceration may exist for many years in the interior of the uterine system, keeping up a continual drain on the economy, constituting a morbid centre from which irradiate numerous sympathetic affections of the most distressing nature; and yet only indicating its presence by symptoms of but little importance in the eyes of the great mass of practitioners.

In such cases it is clearly the duty of the medical attendant to adopt those means of diagnosis and treatment, which will alone enable him to recognise, and to cure the disease. We can be no more called upon by the strictest sense of morality and propriety, to leave a miserable woman affected with such a malady, without relief, than to refuse to operate on the female for lithotomy, polypus, fistula, or for any other disease affecting the genito-urinary system.

CASE II. — Ulceration of the cervix uteri, of ten months' standing, the result of parturition; treated by cauterisation; perfect cure after a relapse.

On the 29th of April last, I was consulted by Mrs. B., aged twenty. She was pale and rather sickly looking. Ten months previously she had been confined, at full time, of her first child. The labour was not tedious, and presented nothing remarkable, her health having been very bad

during her pregnancy, she was recommended not to suckle her child, and a wet-nurse was procured. Nothing unusual appears to have immediately followed the confinement; neither metritis, stoppage of the lochial discharge, nor other accident; her strength, however, did not rally, she remained weak, languid, unwell, and subject to a slight, leucorrhœal discharge. Two months after, the catamenia returned, and subsequently made their appearance every month, regularly; but the function was attended with rather more pain than previous to pregnancy, she experienced little or no pain, however, in the loins or hypogastrium, although from the time of her confinement, the purulent leucorrhœal secretion gradually increased in quantity. A few weeks before I saw her, the discharge became occasionally tinged with blood. I was attending, at the time, a friend of hers, a married woman, of thirty, for advanced ulcerated uterine cancer, Mrs. B. became alarmed by the appearance of blood in the discharge, fearful lest she should be similarly affected, and was thus induced to consult me. On exercising the toucher, I found the surface of the cervix soft and velvety; there was a slight general induration of the cervix, but no very marked hypertrophy; slight retroversion. The speculum showed an ulceration nearly as large as a half-crown, occupying both lips and covered with florid bleeding granulations. The anterior lip was much the larger one of the two, there was an abundant mucoso-purulent discharge in the neighbourhood, and the upper part of the vagina was inflamed and congested. The lower region of the vagina, and the vulva, presented nearly the usual healthy colouration; the tongue was rather loaded; the appetite bad; the action of the bowels irregular; palpitations, general languor, and disinclination for any exertion. These symptoms had latterly become much more marked, especially after fatigue, when she experienced a slight bearing down sensation; there was no pain whatever, in congress. The treatment I adopted consisted in cauterisation with the nitrate of silver every five or six days; injections with the sulphate of alum; a saline laxative, once or twice a week; and rest in the horizontal position as much as possible.

May 6th. — For three days after the cauterisation, there was no leucorrhœal discharge. It then returned, but diminished in quantity; no pain; ulceration not diminished in size, but granulations smaller

and do not bleed so easily. The congestion of the neighbouring parts is evidently diminished; same treatment; cauterisation every fifth day; in addition, cold water enemata and tepid hip-baths.

15th. — Finding the cervix still congested and red, the granulations florid, and ulceration not much diminished in size, I abandoned the nitrate of silver for the acid nitrate of mercury, with which I cauterised the ulcerated surface freely. Same treatment; and in addition, half a drachm of sesqui-oxide of iron daily, the general state not being much improved. Two days after the cauterisation the menstruation came on, a few days earlier than usual, and with much greater freedom and ease than on previous occasions.

June 15th. — On the falling of the eschar, produced by the cauterisation of the 15th of May, the cervix was found much diminished, so much so as to enter the speculum very easily; and the surrounding parts were very much less congested. Cicatrisation at once commenced, and progressed rapidly. The same general and local treatment was continued; the ulceration being cauterised once a week, more or less freely, according to circumstances, and generally with the nitrate of mercury. — To-day it is nearly healed; the inferior lip is, indeed, completely so, there being merely a little redness about it: the size of the cervix is nearly natural; there is not a trace of induration. The leucorrhœal discharge has nearly ceased; there are no pains any where; the general health is very much improved; the lips and cheeks previously pale, have become rosy; the palpitations and cardialgia have disappeared; the tongue is clean, and the appetite good. I therefore, suspended the iron, the laxative medicine, baths, astringent injections, &c.; merely touching the small remaining ulcerations occasionally, with the nitrate of silver; enjoining vagina injections with cold water; a generous diet, with a little good wine, and moderate exercise. As there was only a very small ulcerated spot on the anterior lip, I subsequently used in my examination the smallest circular speculum, which, the cervix being slightly retroverted, did not entirely uncover the inferior lip.

25th. — The ulceration is completely healed on the anterior lip, and presents a firm white cicatrix. No discharge, except a little transparent mucus; general health very good in every respect. I told my patient not to live with her husband for a

month, and to use once or twice in the twenty-four hours during that period, cold water vaginal injections.

A month afterwards, the lady called on me, and stated that the vaginal discharge had returned, and had, as before, been streaked with blood after congress. On examining with the small circular speculum, which I had latterly used in her case, I found the anterior lip perfectly cicatrised, as I had left it; but, on using Ricord's bivalve speculum, so as very freely to expose the under lip, I perceived at once that it had re-ulcerated, and presented a granulating substance of the size of a sixpence. On closely questioning my patient, I ascertained that her husband had resumed his matrimonial rights as soon as I ceased to attend, which explained the return of the ulceration on a spot that was still very likely the seat of erythematous redness when I last saw her, although I did not then ascertain the fact. The treatment formerly pursued was resumed, and in the course of a few weeks the cure became really perfect. I did not this time pronounce my patient well until I had ascertained, by a careful and satisfactory examination, that all traces of redness had disappeared.

Remarks.—The above case is a very interesting illustration of a considerable proportion of the cases that are observed in practice. It also well illustrates the views which I have brought forward to account for the formation of ulcerations of the cervix after parturition. The patient had been in very indifferent health during her pregnancy, and gave birth to a sickly child, which died in the course of the year, of convulsions. Being in this bad state of health, it is probable that some abrasion or lacerations of the mucous membrane of the cavity of the cervix, occurring during parturition, did not heal as usual, but ulcerated, perhaps, under the *immediate* influence of some local cause. The ulceration having been formed, would be perpetuated, owing to the anatomical and physiological peculiarities which I have described at length, and would, subsequently, contribute to undermine the already indifferent health of the patient. The sympathies which unite the uterus to the rest of the economy, are sufficiently powerful to account for a suppurating sore, situated on the cervix, destroying the health in the course of time, whilst the nearly total absence of the spinal nerves in the cervix uteri, explains the absence, at least the latent form of the ordinary symp-

toms of the inflammation and ulceration. Had this lady applied to one unacquainted with the very important facts which I am endeavouring to propagate among my fellow practitioners, she would, most certainly, have been treated merely by tonics; and the leucorrhœal discharge would have been considered as merely the *result* of weakness, not of a deep-seated, organic lesion, the true cause of all the mischief. In this case, indeed, nearly the only *local* symptoms were the discharge, and the occasional presence of a few drops of blood; for the hypogastric and lumbar pains, and the bearing down sensation, which become prominent symptoms when there is hypertrophy and prolapsus, were not sufficiently marked to even attract the attention of the patient, until questioned thereon. The inflammatory hypertrophy being so inconsiderable, and the parietes of the vagina possessing great contractile tonicity, the cervix was supported also, in its normal position, which accounts for the latter fact.

The nitrate of silver was evidently not a sufficiently active caustic to destroy the irritability of the ulcer. This I have generally found to be the case when the granulating surface is covered with fungous, very vascular granulations; or when there is deep-seated inflammation. The moisture of the granulations absorbs the caustic, and renders its action too superficial in the former case; and in the latter it does not appear to have sufficient power to modify the general inflammation; most probably also, from its very superficial action; from the time that a stronger caustic was used, the case rapidly progressed towards a cure. When I ceased my attendance I omitted to examine the inferior lip, as I ought to have done, for although healed, it was still red when I last saw it, ten days previous. Had the patient followed my directions, however, I do not think the red surface would have again ulcerated, as it subsequently did, owing most likely to the imprudence of the husband. This untoward circumstance proves, however, how necessary it is fully and perfectly to examine every region of the cervix. I was induced, in this instance, to abridge the final examination, owing to a little unusual exhibition of impatience on the part of the patient. I now feel certain that the cure will prove permanent.

In the above case had the patient remained for years suffering from the malady which I thus discovered and treated,

who can say that it would not have terminated in cancerous disease? — *Lancet*.

PERFORATION OF THE CERVIX UTERI BY THE FOOT OF THE CHILD, OCCURRING DURING PARTURITION.

Dr. T. WILLIAMSON relates the following interesting case:—

"Mrs. B——, aged nineteen years, strong and healthy, expected to be confined with her first child about the middle of last May. At eleven o'clock on the evening of the 14th of May, I was requested to visit my patient, as both she and her friends supposed that labour had commenced. Upon making a careful examination, I ascertained that labour at that time had made little or no progress, inasmuch as the os uteri was wholly unaffected, and the presentation so high up as to prevent me satisfying myself with regard to its nature. Under these circumstances I took my leave, requesting to be called should the uterine pains become more urgent. At half-past ten o'clock on the succeeding morning, I was requested to visit my patient. I then learned that she had slept the greater part of the night, nor was it until morning that she was seized with regular uterine pains. Examination now enabled me to discover the os uteri dilated to about the circumference of a half-crown piece, with a thin and yielding margin. The left foot presented, and notwithstanding the previous escape of the liquor amnii, was still fully retained within the uterus. For about an hour and a half previous to my second visit the pains had been recurring every five minutes, but were by no means severe. I had not been above twenty minutes in the house, and certainly not more than a quarter of an hour elapsed from the period of my second examination, when my patient was seized with three strong and remarkably violent pains, following each other in close succession. From the character of these pains I was induced to make a third examination. My surprise was very great at finding the change which had taken place. Instead of the left foot being still within the uterus, and fairly placed for exit through the os, as formerly, I now found that it had effected a complete passage through the substance of the anterior section of the uterus, about an inch from the margin of the natural orifice. In fact, not only had the foot passed through this oblique rent, but the whole leg up to the knee; the limb to this extent lying in the

vagina. No hemorrhage resulted. Scarcely had I time for deliberating as to the proper mode of procedure under these circumstances, ere another pain as violent as the three preceding, forced the foot, leg, and thigh, beyond the external parts, carrying with them a thick band of uterine substance, formed by the tissue between the natural and preternatural openings.

"I found myself called upon to adopt some immediate step for the safety of the patient. The thigh was riding, as it were, over the thick uterine band, and I was not without much apprehension, that should another labour-pain, of similar violence with the preceding, supervene, one of two effects would inevitably result; either the thick band of uterine fibres would give way, or, more likely, the rent would extend through the uterine wall and peritoneum. The former termination, as the least of two evils, I was now determined to anticipate, (provided uterine action should supervene,) by at once cutting through the tight encircling band. But immediate performance of this operation was rendered unnecessary by the suspension of uterine action. I had previously sent for the assistance of my friends, Drs. Anderson and Combe, and was glad on the arrival of the former gentleman, to avail myself of his long and extensive experience. In consulting upon the case, it was at first thought indispensably necessary to divide the opposing band. Alive, however, to the risk of hemorrhage incurred by this procedure, it was afterwards agreed that delivery should be attempted, by endeavoring to return the protruding member through the lacerated opening, and bring the foot through the proper os uteri. The cessation of labour-pains favoured me in this undertaking, in which I succeeded, although not without experiencing considerable difficulty. Shortly thereafter the uterus again commenced to act, and in little space of time delivery was accomplished. The placenta speedily followed, and my patient was left comfortable and happy in the possession of a living child. Upon the tenth day from delivery the patient was perfectly free from complaint, and able to sit up. I regret to say, that owing to my patient shortly afterwards removing to the country, I was thus deprived of the opportunity which I desired, of making a thorough examination of the uterus several weeks after delivery."—*Northern Journal*.

OBSTETRIC MEMORANDA — PREMATURE ARTIFICIAL DELIVERY.

By A. H. CENAS, Professor of Midwifery in the Medical College of Louisiana.

CASE I. *Induction of Premature Artificial Delivery for the relief of Obstinate and Exhausting Vomiting.*

On the 25th of October last, I was called to see Mrs. B., a German woman, aged about 35 years, and whom I found laboring under the following symptoms: great muscular prostration, with emaciation and incessant vomiting, aggravated on the injection of the smallest quantity of fluid. She was pregnant with her fifth child, and according to calculation, was then just entering her seventh month. The nausea and vomiting that generally accompany pregnancy commenced with her very early, and gradually increased in severity up to the present time, when her condition was truly pitiable; confined to her bed from extreme debility, and reduced to a state of almost marasmus, she was nevertheless tormented by insatiable thirst, the slightest indulgence of which sufficed to aggravate the vomiting and induced distressing cramps. I learned that she had been for some time past under the prescription of a physician, who had evidently used all the routine of anti-emetics without success, and she now earnestly implored me to relieve her from her wretched condition. Looking upon the case as one of sympathetic irritation of the stomach from uterine distention, and considering the failure of the previous treatment, I made up my mind, at once, that the only plan that held out any prospect of success, was the induction of premature labour — advised by Dr. Lee, and performed several times by himself and others, in similar cases, and with the most successful results. I was not at once permitted to put my plan in execution, from a vague fear of the consequences entertained by the patient herself; but after several days spent in fruitless general efforts, such as leeching and blistering the epigastrium, use of anti-emetic potions, creasote, lime water, &c., I was, the 2d November, earnestly entreated to make the trial proposed. Accordingly, in the afternoon, at about six o'clock, after an examination per vaginam, by which I found the uterus low, soft and dilatable head presenting and fetus alive, I ruptured the membranes without difficulty, with a small sized gum elastic catheter, armed with its stiles. The liquor amnii dribbled away slowly all that night, and next morn-

ing, November 3d, uterine contraction commenced, which on the 4th terminated in the expulsion of a small but healthy and active female fœtus, of about seven months. It is worthy of remark, that not more than an hour after the puncture of the membranes, and before much water could have been lost, the irritability of stomach greatly diminished, and in the course of the night, the patient was able to retain with comparative comfort a considerable quantity of fluid.

From this date the mother recovered rapidly, and is now in the enjoyment of robust health; but the infant died about a fortnight after its birth, more, however, from neglect of the most ordinary precautions than from a want of viability.

CASE II. *Induction of Premature Labour for the relief of Convulsions.*

Mrs. A., aged about 25 years, of a short and rather stout habit, and in the seventh month of her second pregnancy, fell suddenly into violent convulsions on the morning of the 23d January last, with no other premonitory symptom than a slight pain in the head. Dr. Rushton, the family physician, was in immediate attendance; and commenced forthwith the most active treatment; but finding at about six o'clock, P.M., that the convulsions continued unchecked, he requested my assistance. I found the patient struggling in a severe paroxysm, with cold clammy skin, small frequent pulse, dilated pupils, and slight stertor in breathing. On examination per vaginam, the os uteri was found low, soft and dilatable, and head of child presenting, but no evidence of uterine action was detected. External examination of the abdomen gave to the hand the sensation of an unusual accumulation of water.

After close consideration of the critical condition of the patient, together with the failure of the previous treatment, it was agreed to puncture the ovum and induce, if possible, premature delivery — this was done, as in the above case, with a small sized male catheter; a very large quantity of liquor amnii immediately escaped, and about two hours afterwards uterine contraction became quite active. At nine o'clock, Dr. Stone was added to the consultation, and at eleven as the os uteri was now fully dilated, the head well down on the pelvis, and the pains flagging, the forceps were applied and the labor promptly terminated; but the child, as was expected, was *still-born*. As soon as delivery took place the

convulsions ceased, and Mrs. A., under the charge of Dr. Rushton, slowly but completely regained her usual health.

Premature artificial delivery is now an operation of acknowledged value in midwifery. It has been lately resorted to with success, both to the mother and child, in cases of deformity of the pelvis, which formerly necessitated the use of instruments destructive to the one and extremely hazardous to the other. It is valuable, also, in certain grave affections incidental to pregnancy, even when the pelvis is of the natural standard—such as convulsions, obstinate and exhausting vomiting, (in which the life of the patient is in danger from pure inanition,) and accidental and unavoidable hemorrhage.

The only question which divides the opinion of accoucheurs is the method of performing it. Dr. Hamilton was in favour of detaching the membranes from the vicinity of the neck of the uterus with a probe; but this method is said to be too slow in cases of emergency. Another plan is the sponge tent, by which the os uteri is gradually dilated, and uterine contractions induced; but this too is slow in its results, and by some is declared to have the opposite effect, viz.: of irritating the os uteri, and producing rigidity.

Puncturing the membranes is preferred by several distinguished accoucheurs, amongst whom is Dr. Lee; it has the advantage of being simple in practice and speedy in its results; the only instrument necessary, being a small size gum elastic or silver catheter.

There is one important step in the operation not to be neglected; and that is the presence of a good and healthy wet nurse, for the purpose of giving at once to the new-born infant, the nourishment that it is in immediate want of, and which the mother may not be able to supply for some time after delivery. It was the neglect of this precaution that cost the life of the infant in the first of the above cases. — *New Orleans Medical and Surgical Journal*.

For the Bulletin of Medical Science.

A CASE OF GUN-SHOT WOUNDS OF THE FACE.

By T. STAINFELLOW, M.D., of Vienna, (Austria).

Sir:—Should you consider the following worth a place in your Bulletin, you will please insert it:

April 29th.—A young man received transversely a ball from a rifle, which

entered the prominent portion of the right os Malar, fracturing it completely, passing across the face above to the palate, and lodging itself in the left antrum of Highmore, dividing all the soft parts completely with the vomer, and at the same time destroying vision of the right eye.

Saw him one hour after the accident: great loss of blood. Directed saturated solution of Saccharum Saturni, as an injection, which acted like a charm, and caused complete contraction of the bleeding vessels. Collapse at 9 o'clock P.M., which lasted eighteen hours, at which time reaction made its appearance. All things doing well until May 7th, when secondary hemorrhage came on. I arrived in fifteen minutes afterwards: great loss of blood; syncope twice; same astringents, followed by ammonia and brandy internally. All things went on well until the 14th, when hemorrhage came on as before. Same treatment.

21st.—Return of hemorrhage. Treatment the same. Bowels opened by salts. Remarkable to say, no fever has ever appeared in the case.

June 28th.—Perfectly well, with very slight disfiguration of the face. Eye gradually recovering its vision under the use of strychnine.

BULLETIN.

Philadelphia, December, 1845.

Philadelphia Medical Schools.

We are assured, on competent authority, that the number of medical students at this time, in attendance on the lectures at the several schools in Philadelphia, viz., University of Pennsylvania, Jefferson Medical College, and Pennsylvania College, is greater than at any former period. In the absence of official returns, which cannot yet be made out, we hazard little in saying, that the collective number will be between eleven and twelve hundred.

The advantages—both direct and

collateral — to this city, from so large a concourse of intelligent and well bred young men, from nearly all parts of the United States, are not, we fear, appreciated as they ought to be by our citizens, either in their individual or corporate capacity. Too many regard the professors of the Medical Schools, whose lectures attract these students to the city, as the parties who are alone or mainly benefited by their presence, and, under this misapprehension of the real state of things, they treat with indifference, even if they do not actually obstruct, properly arranged plans for maintaining the vantage ground so long since won for Philadelphia. So far from the professors being the exclusive, or even chief recipients of the money spent in our city by students, and which, we think, may be estimated for the coming season at \$300,000, it can be shown, that, for one dollar received by them for instruction, two dollars are received by their fellow citizens for boarding and lodging, clothes, books, instruments, drugs, &c., required by the students, to say nothing of the purchases made in future years by these gentlemen, to meet their professional requirements, as well as to gratify their personal tastes and those of their families and friends. An intercourse with the city once begun, is continued in after years, in such a way as to be a source of continued pleasure and advantage to both parties; and it has its full share in contributing to make Philadelphia be looked upon, at a distance, as the great mart of literary productions, and of tasteful and decorative furniture for houses, and dress and ornaments for personal attire.

If this view be correct, and we believe it to be so, having, on our part, no direct interest in overcharging the picture, it would seem to be obviously the duty of all classes of our citizens to give every facility in their power, in aid of the most efficient and comprehensive system of medical instruction. Their countenance of the efforts made

by our Medical Schools, is due to the cause of humanity and science, which is best fostered by the fullest preparation, both of a theoretical and practical nature, being allowed to students for the responsible position which ere long they will assume as physicians, on whose intelligence and skill the health and lives of their fellow citizens will so much depend. Something, in the estimate of the most phlegmatic, is due, also, to the reputation of Philadelphia, as a favoured seat of learning, science, and the arts; — those softening, and yet ennobling influences which contribute so much to the happiness and fame of a people.

Select Works of Hippocrates and Galen.

In the search — it may rather be called race — after novelties, and in undue complacency for modern discoveries and observations, we are apt to overlook, or even treat with disrespect, our ancient masters in medicine, to whom we owe so much that is valuable in the description and prognosis of diseases, and whose curative indications, in many instances, have not been materially improved. It is a useful habit, irrespective of any direct gain, that of large retrospection; it implies, in fact requires, thought, comparison, and the exercise of a dispassionate judgment. We rise from its indulgence wiser, with faculties more matured, prejudices abated, and the mind better prepared afterwards to disentangle the twisted skein of truth and error.

To speak of the ancients and of retrospection in medicine, suggests at once to our minds the two great teachers and leaders in their respective ages, Hippocrates and Galen, of whose writings, and, consequently, opinions and observations, there is, we fear, a sad lack of knowledge among us, in this country at least. It is not necessary to inquire into the causes of this neglect; our object being, just now, to point out, to a certain extent, the remedy. It is sketched in a notice issued by the ve-

nerable and learned Dr. John Redman Coxe, who proposes, if five hundred subscribers can be procured, to translate for publication the selected works of Hippocrates and Galen, in two — it may be three — volumes. During a great many years, this gentleman has been a close student and admirer of the old medical classics, and has taken uncommon pains, at great expense, to procure a number of different editions of each of them, with a view to critical inquiry and comparison. Of his fondness for retrospective lore, and desire to elicit the truth, the medical public had an opportunity of learning, some years ago, on the occasion of *An Inquiry into the Claims of Dr. William Harvey to the Discovery of the Circulation of the Blood: With a more Equitable Retrospect of that Event, &c.*

We cannot allow ourselves to doubt of the requisite number of subscribers being procured during the present season, to authorise our estimable confrere to bring out his translations, nor of the benefits that must accrue, in consequence, to his professional brethren throughout the United States.

The terms of subscription are three dollars a volume. Names of subscribers at a distance may be sent (post paid) to Lindsay & Blakiston, Philadelphia.

Regimen Sanitatis Salernitanum.

Our attention has been recently directed to this poem in rhyming Latin verse, on the *Preservation of Health*, from our becoming the possessor of a copy of Sir Alexander Croke's edition, which includes, together with the original, an ancient translation, entitled, *The Englishman's Docter*, or, *The School of Salerne*, or, *Physicall Observations for the Perfect Preserving of the Body of Man in continuall Health*. Interspersed through the volume are curious etchings, "taken from the old wooden cuts in the German editions of Curio, printed in 1559, 1568, & 1573."

It is well remarked by the editor of the present edition (Oxford, D. D. Talboys, 1830), that "above one hundred and sixty editions of the *Schola Salernitana* are proofs of merit and popularity." There are numerous translations of it in German, French, Italian and English, and also a Dutch, a Bohemian, a Polish, and an Hiberno-Celtic translation.

The English version, in the present volume, conveys to the general reader a good idea of the original; but sententious as it may seem to be, it falls short of the terseness and compression of this latter. We give the first stanza, and then subjoin the original:

The Salerne School doth by these lines
Impart
All health to England's king, and doth
advise
From care his head to keepe, from wrath
his harte,
Drink not much wine, sup light and soone
arise,
When meat is gone long sitting breedeth
smart:
And after noone still waking keep your
eies,
When mov'd you find yourself to nature's
need
Forbeare them not, for that much danger
breeds,
Use three physicians still, first Doctor
Quiet
Next Doctor Merryman and Doctor Dyet.

Anglorum Regi scripsit schola tota Salerni
Si vis incolumem, si via te reddere sanum.
Curas tolle graves, irasci crede profanum,
Parce mero, cenato parùm, non sit tibi
vanum
Surgere post epulas, somnum fruge meri-
dianum,
Non mictum retine, nec comprime fortiter
anum:
Hæc benè si serves, tu longo tempore vives.
Si tibi deficient medici, medici tibi fiant
Hæc tria, mens læta, requies, moderata
diæta.

The expressive line in the above —

Non mictum retine, nec comprime fortiter
anum

is poorly rendered by the vague directions : —

When mov'd you find yourself to nature's
need
Forbear them not, for that much danger
breeds.

Respecting the origin of the poem, it is the most generally received opinion that it was addressed to Robert, duke of Normandy, oldest son of William the Conqueror, on the occasion of his return from the Holy Land, by way of Salernum, where he tarried some time in order to consult the physicians of that city for a wound in the right arm, which he had received from an arrow supposed to be poisoned, and which had degenerated into a deep ulcer or fistula. The city of Salernum gave origin to the earliest school in Christian Europe, where medicine was professed, taught and practised.

Necrology.

The profession has to regret the loss of one of its worthiest and most accomplished members, in the death of Dr. JAMES JOHNSON, long known in medical literature as editor of the *Medico-Chirurgical Review*. He expired at Brighton, after a short illness, on Thursday, the 9th instant [October], in the 69th year of his age.—*Medical Gazette*, Oct. 17th.

In our own immediate circle of professional worthies, a painful void has recently been caused by the death of Dr. HENRY NEILL, who, if less known to literary and scientific fame than some of his brethren, has left behind him a well merited reputation for a life spent in the unostentatious exercise of the Christian virtues, and the patient, conscientious, and successful discharge of his duties as a physician, in full practice.

We forbear at this time from a detailed exhibition of the distinctive merits of the deceased,—as occasion will be offered, hereafter, for our doing so in a suitable manner, when availing ourselves of the information collected

by the venerable President of the College of Physicians, who has been nominated to this trust by that body of which Dr. Neill had been for a long time Vice President.

Dictionary of Practical Medicine.

We have received the tenth number of the American republication of this admirable work, sent out under the editorial guidance of Dr. Lee, who, in his additions, seems to be imbued with a good deal of the spirit of Dr. Copland himself.

In noticing the last part — *Palate to Pestilence*—recently issued in London, the *Lancet* holds the following strong, but apposite language :

"Remarks of the kind are very trite, but we are forced to repeat, with the appearance of every part of this immense work, that viewed as a mere effort of labour, it is one of the most extraordinary, that has ever appeared in the medical literature of this country, as a single-handed production. Dr. Copland has proved himself a paladin of the pen ; when his dictionary has reached its full proportions, for which a few more parts will suffice, it will indeed be an intellectual pyramid. Looking at the thickset page, with its double columns, and diamond type, the multitudinous references, and copious bibliography, any one accustomed to literary labour must feel astounded at its being the work of one man. It could only have been wrought out by unwearied and pains-taking application, and the most careful husbandry of time. In one of the early parts of the work, in the article on the Eye, we get an insight into the time it has taken the learned artificer to produce his work, he says : — "I have continued, for many years, to read or write from eight o'clock in the evening till two or three o'clock in the morning." Six or seven hours nightly, spent by the man in pleasure, idleness, or sleep. This is truly spending the midnight oil ; nothing but the hardest *physique* could have stood against such a perpetual moil and left the worker hale and strong, as we believe is the fortunate lot of Dr. Copland."

AWFUL MORTALITY ON BOARD H. M. STEAMER ECLAIR.

The *Eclair* steam-sloop, Commander

Walter G. B. Estcourt, arrived at the Motherbank on Monday, with the yellow flag, with a black ball in its centre, flying from her mainmast head, emblematic of death on board. She has been so awfully visited with sickness since she has been on the coast of Africa that she has been sent home. No less than sixty-five have died in the vessel, and others were dying hourly. The *Eclair* was sent off the station by the orders of Commander C. H. M. Buckle of the *Growler* steam sloop; prior to which, however, on the disease manifesting itself in the deadly form it assumed, a commission of three surgeons sat upon the case to decide what was best to be done under the alarming circumstances, when they came to the unanimous resolution of sending the *Eclair* off the station and home. The names of the officers dead are Commander Estcourt; the surgeon, Mr. John Maconchy; the paymaster and purser, Mr. Thomas R. Hallett; the assistant surgeon, Mr. Charles Hartman; the clerk, Mr. Cleland Mill; naval cadet, Mr. Symons; master's assistant, Mr. Goman. The *Eclair* was only commissioned last August twelve months, and is a new vessel (first named the *Lucifer*), of 350-horse power. — No one is allowed to go on board of or to leave the vessel. The *Echo* tug has, however, towed down a lighter with 30 tons of coal, stores, &c., on board, for the use of the vessel. This stock will be moored to a buoy, and left for the *Eclair's* survivors to take on board. After it is shipped she will leave for Standgate creek, near Sheerness, and there ride out forty days or more after clean bills of health have been received from her. — *London Examiner*.

Out of 145 officers and men, her full complement, 123 have been attacked by the fever since April last, and 65 have died, representing a mortality of more than fifty per cent. It has been stated that none of the Kroomen, or blacks, had suffered from an attack. Three of the medical officers of this ill-fated vessel died before she left the African seas; two on the coast, and one, Dr. McClure, between the Cape de Verdes and Madeira. Mr. Sidney Bernard, who volunteered at Madeira to take charge of the sick, is another victim since her arrival in England.

TRIBUTE TO DR. LEE.

Dr. Ramsbotham, in a note, recognises Dr. R. Lee's investigations on the nerves of the uterus.* We most cordially concur with him. We regard the discovery of this large system of ganglia and nervous plexuses as the most important anatomical discovery of the present day, and it is gratifying to us to pay the author of it our willing tribute of admiration for his untiring zeal and labor in displaying them. But why has not Dr. Ramsbotham, in his second edition, described them and delineated them? — *Med. Chir. Rev.*

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BIBLIOGRAPHY.

Neill's Outlines of the Nerves.†

This volume is as beautiful as it is useful, — one in which both author and publishers have united their efforts for the especial benefit of the student, to whom a more acceptable work could not be offered, for facilitating an adequate acquaintance with the elements of neurology. Like that on the arteries, it has the distinctive recommendation of the names being affixed to the trunks and ramifications of the nerves, and in this way, of saving a deal of trouble and time, and of impressing them more firmly on the memory.

The engravings are in the best style, and the paper and type correspond; and yet, notwithstanding these evidences of what might seem luxurious indulgence in tasteful decoration, the volume is sold at a price which would be thought extremely low for one made up in the commonest fashion, and with the crudest pencil sketches.

The text consists of brief descriptions of the origin and course of the nerves, as displayed in the engravings, beginning with those seen at the base

* See Lectures on the Theory and Practice of Midwifery. Philadelphia. 1844.

† Outlines of the Nerves: With Short Descriptions. Designed for the Use of Medical Students. By John Neill, M.D., Demonstrator of Anatomy in the University of Pennsylvania, Physician to Wills's Hospital, Lecturer on Anatomy, &c., &c. Philadelphia, Ed. Barrington & Geo. D. Haswell, 1845. pp. 30. With Nine Plates.

of the brain, in Plate first, and ending with those of the lower extremity, in Plate ninth.

ANIMAL CHEMISTRY.

*Simon's Chemistry of Man.**

Bird on Urinary Deposits.†

Great advances have been made in Animal Chemistry since the beginning of the present century, and still more within the last few years. Both physiology and pathology are indebted to it, and although therapeutics is not yet under equal obligations, it argues a no very sanguine disposition to believe, that at the present rate of progress, decidedly beneficial results will be reached in this department also. Liebig has contributed to this onward march, both in his success and his failures, by his inviting so many others to investigate for the corroboration or disapproval of his deductions and speculations; for even chemistry—which professes to rest on experiment alone—has its speculations, some of them sufficiently bold, not to say extravagant.

Among the most zealous and meritorious contributors to the progress of Animal Chemistry is Dr. Simon, the first part of whose work, entitled "The Chemistry of Man," is now before us, as the republication of a volume issued by the Sydenham Society of London. It is to be regretted, both for the reputation of the author and in justice to the subscribers to the Society—among whom we have the honour to be numbered—that the entire work was not translated before its publication was de-

termined on, or, at any rate, that the two parts did not appear in the same year.

The design of the author is set forth in his Preface, where he tells us:

"The present volumes comprise physiological and pathological chemistry. They treat of the physical and chemical relations of the fluid and solid portions of the human body in a state of health, and of the modifications they experience in different diseases. Moreover, in every instance, the chemical examination of the fluids and solids of the lower animals is appended to each chapter. The order in which the various matters treated in these volumes are discussed must be regarded rather as natural than physiological. After the circulating fluids, viz., the blood, lymph, and chyle, with which I commence,—I treat of the secreted and excreted fluids, as, for instance, those of the chylipoietic system, of the female breast, of the mucous membranes and skin, of the kidneys, &c.: next in order, I take the fæces and vomited matters. I then consider the various tissues that enter into the composition of the animal body, as, for instance, the bones, muscles, skin, and glands; and I conclude with a description of various solid and fluid morbid products, such as calculi, tubercular and carcinomatous matter, dropsical effusions, &c."

Dr. Simon is far from being inclined to overrate the progress and applications of animal chemistry, when he says:

"Although very little has yet been done in physiological and pathological chemistry, the rational physician, who ventures to cast aside the trammels of dogmatism and empiricism, cannot, for an instant, doubt that pathology, therapeutics, and diagnosis, are only safely based on chemistry, physiology, and morbid anatomy; he cannot entertain a doubt that the same chemistry with which he scans the changes in crude inorganic matter, will likewise enable him, if not at present, yet surely at some future period, to detect the variations in the composition of the animal fluids and solids, some of which are dependent on physiological, others on pathological causes, and will throw a new light on the normal functions of the organism, as well as on the various processes of disease."

The main subject of the present volume is the chemistry of the circulating fluids, and more particularly of the blood; so much so, indeed, that it

* *The Chemistry of Man.* By Dr. J. Franz Simon, Fellow of the Society for the Advancement of Physiological Chemistry at Berlin, &c., &c. Translated by George E. Day, M.A., and L.M. Cantab. Licentiate of the Royal College of Physicians. To be complete in two Parts. Part I. pp. 292. 8vo. Lea & Blanchard. Philadelphia. 1845.

† *Urinary Deposits. Their Diagnosis, Pathology, and Therapeutical Indications.* By Golding Bird, A.M., M.D., Assistant Physician to and Lecturer on Materia Medica at Guy's Hospital, &c., &c. Philadelphia. Lea & Blanchard. 1845. pp. 237. 8vo.

might be very well entitled, Simon on the Chemistry of the Blood. Good service has been rendered by Dr. Day, as editor, in his writing an Introduction of between sixty and seventy pages, based, in a great measure, upon another work of Dr. Simon's — "Chemistry of the Proximate Constituents of the Animal Body" — with additional facts gleaned from Lehman's Manual of Physiological Chemistry and Mulder's Chemistry of Animal and Vegetable Chemistry. He has, also, inserted "such additions as the progress of chemistry, since the original publication of the work, has rendered necessary."

This is one of those works that, to be understood, must be carefully read and studied throughout: there is no pervading argument that continually presents itself, and for the enforcement of which we may pass over many separate proofs, and content ourselves with general summary. Almost every page in the Chemistry of Man abounds in details of analyses or analytical results; and hence it is not easy for us to convey to our readers any thing like a full idea of the work by occasional extracts. As, however, both in its physiological and pathological bearings, the question of the extent and nature of the differences between arterial and venous blood is important and constantly recurring, we shall introduce here the conclusions which Dr. Simon has reached. He thinks that the differences cannot by any possibility be very great; but we shall best convey his opinions in his own language:

"Hence we are led to the conclusion that there are certain differences in the composition of arterial and venous blood, which, however, are not constant, but vary according to circumstances.

"The most important of these circumstances are the general health of the individual, and the mode of nourishment whether dependent upon or independent of the health.

"Let us now consider what must be the qualities of arterial and venous blood when all the functions of the organism are properly discharged, when the nutrition

exactly corresponds with our actual wants, and when the blood undergoes the various changes that we have described in a former page.

"Under these circumstances we arrive *a priori* at the conclusion that the final result of the changes in the blood during the act of circulation must necessarily be this: there must be a substitution of fresh and proper nutriment to supply the place of those constituents of the blood which are being perpetually consumed; for it is obvious that if in each circulation the consumption of albumen or hæmatoglobulin exceeded the supply by the merest trace, after a certain period the blood would acquire an abnormal constitution. We know that albumen, fibrin, and salts are consumed in the nutrition of the peripheral system; if, therefore, the blood receives no fresh supply of these substances, before it arrives in the larger venous trunks, it is clear that the venous blood must be poorer in these substances than the arterial.

"The blood also conveys away from the peripheral system various products formed by the consumption of the tissues; for instance, certain salts, extractive matters, &c., some of which are eliminated by the kidneys, in a state of great dilution, while others are removed by the skin. If the quantity removed exceed the supply, the venous blood will be poorer in extractive matters and salts than the arterial; it will be richer in these substances if the reverse be the case.

"The venous blood will contain more or less water than the arterial, according as the elimination of water by the kidneys, liver, skin, and lungs, exceeds or is less than the quantity supplied by the fluid of nutrition.

"The blood-corpuscles, and the germs from which they are developed, are likewise supplied to the blood by the nutrient fluids. They are farther developed, and ultimately dissolved during the course of the circulation, and their development and solution is especially facilitated at those points where the action of oxygen on the blood is most powerful.

"It is obvious that the blood, immediately after having received the chyle, must contain more blood-corpuscles than before; it depends, however, upon several circumstances whether venous generally contains more or less corpuscles than arterial blood.

"The plasma receives a supply of fibrin from the solution of the blood-corpuscles;

if the supply exceeds the consumption of this constituent in the peripheral system, the venous blood may become richer in fibrin than the arterial.

"If any albumen should be produced by the solution of the blood-corpuscles, it may be regarded as a substitute for the portion of that constituent which has been taken up from the blood for the nourishment of the tissues.

"From these observations we are led to conclude that there is no necessary variation in the composition of venous and arterial blood. The organism, when free from disturbing influences, possesses in itself various means of regulating the due admixture of its different juices, and more especially of that most important vital fluid, the blood.

"Amongst these means we may place the influence of the nervous system, its power of increasing or lessening the action of the secreting and excreting organs, and of inducing in them either co-operating or vicarious action.

"The differences in the constitution of arterial and venous blood cannot, however, by any possibility, be very great. In my analyses they usually fluctuate between fractions of a hundredth part; and they appear to be less between analyses 3 and 4, than between analyses 1 and 2, since the former (anal. 3 and 4) were made on the blood of an old, decrepit, half-starved horse, in which the change and waste of tissue, and the consequent metamorphosis of the blood, would be very slight. That the difference must be small is obvious, when we consider that the whole course of the circulation may be accomplished in 25-30 seconds; that the plasma just conveyed to the tissues must every where propel the nutrient matter conveyed there by the preceding blood-wave, and that the tissues, every where saturated with nutrient plasma, only take up a supply proportioned to their consumption. The process of nutrition in the peripheral system is continuous and is supported by the liquid plasma with which all the tissues are surcharged; hence these tissues become the temporary recipients of far more nutrient matter than they can possibly consume, even as the rivulet contains infinitely more water than is necessary for the refreshment of the soil on its banks.

"In both cases we found that the venous blood contained a larger proportion of solid constituents than the arterial; hence we infer that more water was removed by

means of the kidneys, liver, and skin, than had been supplied to the blood by the nutrient fluids.

"The quantity of fibrin in the venous blood in analysis 2 is greater than in the arterial blood, although, from our knowledge of the fact that fibrin is employed in the process of nutrition, we should have expected an opposite result. Hence we are led to attribute the excess of fibrin to the consumption of a large proportion of blood-corpuscles, a view which is confirmed by the circumstance that the venous blood in this instance is poorer in blood-corpuscles than the arterial.

"The proportions are reversed in analysis 4, but whether from opposite causes or not I cannot decide. It is singular that in both instances the quantity of albumen is greater in the venous than in the arterial blood, since there can be no doubt that this constituent is consumed in the nutrition of the tissues, and that a portion of the changed plasma enters the lymphatics. I do not see how this increase can be accounted for, unless we assume, as I have previously done, that a portion of the globulin of the blood-corpuscles is converted into albumen during their metamorphosis.

"In the present state of our knowledge regarding the metamorphosis of the blood, it is as difficult as it is hazardous to attempt to explain the various causes upon which the differences between venous and arterial blood are founded. There are, as I shall proceed to show, decided differences between the blood of the renal arteries and veins, and between the blood of the hepatic vein and of the vena portæ; and yet, as has been already shown, the differences between the blood of the aorta and of the vena cava are very immaterial and trifling. To produce this ultimate similarity, other changes (not yet heeded by the physiologist) must have largely contributed."

"To the physician, the most interesting portion of the work, as far as published, is that on "Diseased Blood." The analyses of this fluid in various morbid states, made by M.M. Andral and Gavarret, correspond in their results, generally speaking, with those instituted by Dr. Simon, except in the former assigning a higher proportion to the corpuscles (especially in the blood during inflammatory diseases) than has been observed to occur by the author. He divides the dis-

eases of the blood into four forms, or states, viz: 1, *hyperinosis*, or that in which there is excess of fibrin, as in inflammatory affections generally; 2, *hypinosis*, where the quantity of fibrin is, frequently, less than natural, or its proportion to the blood corpuscles is less than in a state of health; 3, *spanæmia*, or poverty of blood — a diminution of fibrin and corpuscles, and a greater proportion of water than in healthy blood; the serum and the salts are sometimes normal, sometimes diminished; 4, *heterochymeosis*, or blood diseased by the presence of substances foreign to its normal state; such as urea, sugar, colouring matter of the bile, fat, pus, and, in some rare cases, animalculæ. This division consists of diseases having nothing in common, except that the composition of the blood is here *qualitatively* changed, whilst in the three former divisions, it is altered only *quantitatively*. It includes *morbis Brightii* and cholera, in both of which urea is found in the blood.

Under the head of *Supplement* are given analyses of the blood of pregnant women, and of menstrual blood and of the lochial discharge. From the analysis of Becquerel and Rodier, detailed by Dr. Day, "they conclude that pregnancy exercises a marked influence on the composition of the blood. The density both of the defibrinated blood and of the serum is diminished, the water, the fibrin, and the phosphorized fat are increased, while the corpuscles and albumen are diminished."

Of the menstrual blood, the most striking peculiarities are "the total absence of fibrin and the increase of the solid constituents, caused by the excess of the blood-corpuscles. The hæmato-globulin was found to be very rich in hæmatin, combined, undoubtedly, with a considerable amount of hæmaphæin; the colouring matter amounted to 8.2% of the hæmato-globulin." But in opposition to this conclusion, as respects fibrin, Dr. Day

asserts, "there can be little doubt, that there is fibrin in the menstrual secretion; its determination is, however, rendered impossible by the presence of a large amount of mucus, which seems to deprive the blood of its power of coagulating."

Without displaying originality, or any positive extension of antecedent knowledge of animal chemistry, this volume of Dr. Simon has, nevertheless, strong claims on the notice of the medical reader, by its presenting him with, in the main, a good and faithful compendium of the physiological and pathological chemistry of the blood, to be ignorant of which, at the present time, no physician standeth excused.

Dr. GOLDING BIRD's Treatise on *Urinary Deposits* is a fit addition to the works of Willis on Urinary Diseases and of Prout on Stomach and Renal Diseases, in its furnishing a guide to a more minute and accurate determination of the various states of the urine and of urinary deposits, and thus contributing to a better diagnosis of diseases, not only of the urinary apparatus, but, also, of the system at large, than can be found in works of general pathology and therapeutics. Dr. Bird's volume has direct claims on every intelligent student who has begun to attend to clinical medicine, and, *à fortiori*, to every medical man who is desirous of obtaining a complete knowledge of the kind and series of morbid processes under which his patients may be suffering.

Dr. Bird, in his preface, adverts to the want which pupils with whom he came in contact, as a teacher, and medical men also, felt for "some work which would enable them readily to discover the nature of a deposit in the urine, and succinctly point out its pathological and therapeutical indications." We cannot quarrel with him for not speaking, in this connection, of the work of Berzelius on *Animal Chemistry*, which is not available for the parties interested.

lowed to mention, *en passant*, the superior advantages, on this point, enjoyed by the American student and practitioner, thanks to the industry of Drs. Boyé and Leaming, who, not more than a year ago, sent out a translation from the German of that part of the work of Berzelius which treats of the Kidneys and of the Urine; detailing the ordinary ingredients of this latter and its appearance and other morbid characters and deposits in disease, and, finally, giving directions to physicians for examining it by appropriate tests, and some general rules for its quantitative analysis. In calling attention to this creditable effort of our townsmen, we do not mean to criticise Dr. Bird; our design is to remind our readers of a source of valuable information, which many of them may have overlooked, and some, perhaps, undervalued.

The work now before us, opens with an Introduction, on the Clinical Examination of the Urine, intended to aid the practitioner in the superficial examination of this secretion, and as a reference to the contents of the volume, which will direct him to the completion of his investigations when at leisure. We are first to suppose that the urine presented for examination is *without any visible deposit*, and we proceed to test its acid or alkaline excess, or predominance of colouring matter; and next assume that we have to do with *urine depositing a visible sediment*, when we try to determine the presence of the various salts,—urates, phosphates or oxalates, and of uric acid and cystine. "The only apparatus and reagents required for these investigations at the bedside are—

A gravimeter, made small enough to float in an ounce of fluid,

Red and blue litmus paper,

A test-tube and watch-glass,

Nitric acid.

All these are readily arranged in a little case, and can thus be always at the convenience of the practitioner. For the microscopic examination of the urine, a vertical instrument on a firm

tripod stand, and large ring-stage, provided with a good half-inch achromatic object-glass is alone required."

The first chapter of the volume is a well written summary of the *physiological origin and physical properties of urine*. As an inference from our knowledge of the phenomena of urinary secretion, we recognize three distinct varieties in every case under investigation:

"Firstly, that passed some little time after drinking freely of fluids, generally pale, and of low specific gravity, (1.003 — 1.009) *urina potus*. Secondly, that secreted after the digestion of a full meal, varying much in physical characters and of considerable density, (1.020 — 1.028 or even 1.030,) *urina chyli vel cibi*. Thirdly, that secreted from the blood independently of the immediate stimulus of food and drink, as that passed after a night's rest, *urina sanguinis*; this is usually of average density, (1.015 — 1.025,) and presents in perfection the essential characters of urine."

"In the investigations of urine in connection with diagnosis, it is very important to notice its physical properties, especially its *density* or *specific gravity*, *colour*, *consistence*, and, in some particular cases, its optical properties." Then follows a description of the modes of discovering the density of the urine, and a figure of "the little instrument known as hydrometer, gravimeter, or urinometer," used for this purpose. "The importance of the knowledge of the density of the urine is very considerable, as it puts us in possession of the data necessary for the calculation of the proportion of solids excreted by the kidneys; and thus not unfrequently enables the physician to detect a previously unsuspected cause of emaciation."

Density at certain periods—"The law of the density of the morning urine being less than that passed at night, holds good in disease, certainly in the majority of cases. A remarkable exception, however, occurs in some neuralgic and hysterical affections, in which immediately after a paroxysm of the disease, the urine falls to its minimum of density at whatever period of the day it is secreted, often after an

hysteric fit being scarcely heavier than pure water."

"A very curious statement has lately been made in Germany by Dr. Schweig, that the density of urine presents a constant rate of increase and decrease during the day, and that *ceteris paribus* it ranges from 1.017 to 1.022 in the forenoon, 1.023 to 1.028 in the afternoon, 1.019 to 1.028 in the evening, and 1.012 to 1.025 during the night. Taking the night urine alone, he states its density to vary through certain limits in a cycle of six days, so that twice in this period its density attains a minimum; on the third and fourth night being higher than on the fifth and second, but then being lower than on the first. Five of these cycles occur, according to Dr. Schweig, in each lunar revolution, counting the night before the new moon as the second day of one of his cycles. The following is the density of night urine taken from an average of 20 such periods:

| Nights of the cycle. | Density of the urine. |
|----------------------|-----------------------|
| 1 | 1.022 |
| 2 | 1.017 |
| 3 | 1.019 |
| 4 | 1.020 |
| 5 | 1.019 |
| 6 | 1.017." |

Specific gravity. — "Dr. Prout's experience has led him to assign 1.020 grains as the average specific gravity of healthy urine. From a number of careful observations made by Becquerel, it appears that the mean density of all the urine passed in 24 hours, and examined by him is, in man, 1.0189, and in woman 1.0151, the mean in the two sexes being 1.017."

Quantity. — "The average quantity of urine secreted in 24 hours varies from 30 to 40 ounces; this is Dr. Prout's estimate, and is certainly the most correct. It is, however, capable of varying at least from 20 to 48 ounces, without exceeding the possible limits of health."

Colours of the urine. — "Among the physical characters of urine, the tints not unfrequently present in different maladies are of great importance, and worthy of being carefully studied. Whatever may be the nature of the colouring ingredients of healthy urine(46), it is pretty evident that they are capable of generating but a small series of tints; varying according to the degree of dilution from nearly colourless, to the usual pale amber colour, and up to deep brown. When much diluted, urine presents a faint greenish tint, as in the urine of early infancy, and in that of chlo-

rosis and hysteria. If bile or blood be present, a variety of colours varying from red to brown, blackish-green, or apple-green, are produced, the latter hue being occasionally indicative of the presence of cystine (107.) It is often of great importance to distinguish between the substances causing some of the varicous colours possessed by the urine. The following table will be found of great use for this purpose."

Chemical Physiology of the Urine, is the subject of chapter second. Of the mode in which uric acid exists in healthy urine, the following view is proposed by Dr. Bird.

"Uric acid, at the moment of separation from the blood, meets the double phosphate of soda and ammonia, derived from the food, and forms urate of ammonia evolving phosphoric acid, which thus produces the natural acid reaction of urine. If the whole bulk of the urine be to the urate of ammonia formed, not less than about 2700 to 1, the secretion will, at the ordinary temperature of the air, remain clear, but if the bulk of fluid be less, an amorphous deposit of the urate will occur. On the other hand, if an excess of uric acid be separated by the kidneys, it will act on the phosphate of soda of the double salt, and hence, on cooling, the urine will deposit a crystalline sediment of uric acid sand, very probably mixed with amorphous urate of ammonia, the latter usually forming a layer above the crystals, which always sink to the bottom of the vessel."

At pages 53-4 and 75-6, the theory of Liebig, that with the increase of animal food and perfection of oxidation there is an increase of urea and a diminution of uric acid, is shown to be utterly untenable and opposed to a number of familiar and well established facts in the nutritive and secretory processes of different animals. Thus, for example, "in acute hepatitis, and in phthisis, diseases in which, in Liebig's own showing, excessive oxygenation is going on, the uric acid, both abstractedly and in relation to the urea, is at a minimum instead of a maximum."

The morbid states of the system and probable causes are pointed out by the author, whenever an excess of uric acid or its combinations with bases occurs in the urine, — as in rheumatism

phthisis, all the grades of dyspepsia, heart disease, &c. ; and afterwards he furnishes the indications of cure. So, in successive chapters, of *uric oxide*, *purpurine*, *cystine*, *oxalate of lime*, the *earthy salts*, and *black or blue colouring matters*. Chapter tenth is on the *general pathology of non-crystalline, organic and organised products*, and chapter eleventh and the last gives the *therapeutical employment of remedies influencing the kidneys*. Microscopic views of deposits are scattered through the volume, and contribute to a better understanding of the descriptions in the text.

Cazenave and Schedel on the Diseases of the Skin.*

The work of MM. Cazenave and Schedel on Diseases of the Skin, has long been known to the American medical public ;—two editions of a translation of it having been published in Philadelphia, viz. : in 1829 and ——. A third, erroneously called the first, American edition has just been issued under the editorial supervision of Dr. Bulkley, of New York, who has made use of the translation by Dr. Burgess.

The known character of the work, as a manual embracing the views and experience of M. Biet—than whom no man stands higher in France as authority on dermatology,—dispenses us from the necessity of eulogy in its favour at this time. Since its first appearance, it should be known, however, that the position of MM. Cazenave and Schedel, and particularly of the former, has undergone a change, from patient recorders and pupils to the attainment of experience and standing as teachers themselves.

* Manual of Diseases of the Skin. From the French of MM. Cazenave and Schedel. With Notes and Additions, by Thomas H. Burgess, M.D., &c. Revised and Corrected, with Additional Notes, by H. D. Bulkley, M.D., Lecturer on Diseases of the Skin, Fellow of the College of Physicians and Surgeons of New York, &c. New York. J. & H. G. Langley. 1846. pp. 341. 12mo.

Dr. Bulkley has had, we believe, considerable clinical opportunities, which he has had occasion to turn to methodical account in his Lectures on Diseases of the Skin ; and it may be readily supposed that his notes would be pertinent and useful. We wish it were in our power to complete our commendation by praising the mechanical execution of this volume, which, in paper and print, is ordinary enough. Compensation for these defects will probably be afforded by its greater cheapness ; and this we can the more readily suppose, as it contains no engravings of any description.

Manual of Auscultation and Percussion.*

Students, and beginners in general, of the arts of auscultation and percussion, must feel obliged to Dr. Francis G. Smith for rendering so entirely accessible the summary of the *Manual* of MM. Barth and Roger, prepared by the authors themselves. The translator has added such matter from the body of the work and other sources as might prove useful. It may, perhaps, be wished that he had supplied the omission which the authors in the text regret their being obliged to leave, of the paper of Drs. Camman and Clarke, of New York (New York Journal of Medicine and Surgery, Vol. iii.), owing to their inability to procure it.

The merits of the original being so well known, and the advantages of a manual on these subjects so obvious, the present little volume will be, we must believe, a favourite with all those who desire to acquire a knowledge of that important part of diagnosis included in auscultation and percussion.

* A Manual of Auscultation and Percussion. By M. Barth, Agrégé to the Faculty of Medicine of Paris, &c., &c., and M. Henry Roger, Physician to the Bureau Central of the Parisian Hospitals, &c., &c. Translated, with Additions. By Francis G. Smith, M.D., Lecturer on Physiology in the Philadelphia Medical Association, &c., &c. Philadelphia: Lindsay and Blakiston, 1845. pp. 160. 18mo.

INDEX.

| | | | |
|---|-----|--|----------|
| Abercrombie, Dr., obituary notice of | 98 | Bethlehem hospital, statistics of | 307 |
| Abscess, cerebral and hepatic | 60 | Bird on Urinary deposits | 429 |
| — mammary, treatment of by breast-pump and syringe | 243 | Blood, analysis of, after long use of nitrate of silver | 269 |
| Administration of medicines, hints for | 16 | —, corpuscles in the | 6 |
| Adulteration of sulphate of quinine | 128 | —, structure and development of | 2 |
| Aeration | 208 | —, difference of composition in the male and female, | 234 |
| Affusion, cold, in poisoning by prussic acid | 267 | — between arterial and venous | 427 |
| Air, vitiated | 75 | —, fluid part of the | 9 |
| —, purification of the | 75 | —, granules | 8 |
| Alvine evacuations, green, of children, described | 367 | —, structure and development of, in insects | 259 |
| Amenorrhœa, | 335 | — in pregnancy | 429 |
| Amputations | 147 | —, two kinds of globules in | 146 |
| Anatomy, Hope's pathological | 250 | —, white or opaque serum of the | 23 |
| Anastatic printing, process of | 206 | — vessels, researches in wounds of, by M. Amussat | 296 |
| Anæsthesia, with loss of motory function of the fifth nerve | 305 | Boardman, Rev. Dr., sermon to medical men | 217, 248 |
| Aneurism, improvement of operations for without pulsation or abnormal sound | 307 | Berie, lectures on the formation of | 13 |
| Animal chemistry | 426 | Body, chemical composition of the | 325 |
| — heat, Spencer on | 179 | Brain, absence of a part of the | 163 |
| — evolution of abnormal | 283 | —, Solly's contributions to the pathology of the | 50 |
| Anus, artificial, in obstructed bowels | 153 | —, connecting fibres of the | 351 |
| Arteries, Neill's Outlines of the | 324 | Brazil and Uruguay, Horner's Medical Topography of | 63 |
| Artery, subclavian, external iliac and carotid, ligature of | 276 | — Sigaud on Climate and Diseases of | 67 |
| Arsenic, case of poisoning by | 166 | Breast, anatomy and diseases of the | 320 |
| Ashwell on Diseases of Women | 178 | Briere de Boismont on Hallucination | 251 |
| Atmospheres, artificial | 76 | Brigham on mental cultivation and excitement | 108 |
| Auscultation, modified, to assist in detection of foreign bodies | 351 | Bright's disease, simulating poisoning by opium | 379 |
| Auscultation and Percussion, Manual of | 432 | Bronchi, tubercular expectoration from the | 230 |
| Autoplasty | 150 | Calabar, natives of, | 355 |
| Barbour on Iodine and its preparations | 220 | Caloric, peculiarities of the morbid evolution of | 284 |
| Bache, Dr., see Wood and Bache. | | Camphor in insanity | 124 |
| Bark, syrup of, Donovan's | 125 | Cancer, microscopic texture of, | 197 |
| Barth and Roger, Manual of Auscultation and Percussion by | 432 | Caoutchouc in toothache | 191 |
| Baths, public hot-water, in China | 172 | Capillaries the | 11 |
| —, vapour at Aix | 207 | Carbonaceous matter deposited in the tissue of the lungs | 199 |
| —, and wash-houses | 250 | Cæsarian operation | 92 |
| Bell, Dr. John, his case of a congenital malformation of the heart | 276 | Caustics and hepatics, different kinds of | 200 |
| Bellows murmur in the heart, with dissection of | 331 | | |
| Bethlehem hospital, improvement of | 97 | | |
| — pupils, attendance in | 96 | | |

| | | | |
|---|-----|---|---------------|
| Cerebral abscess - - - - | 60 | Dyspepsia, Dick on the various forms of | 235 |
| — spinal system, disease of - | 88 | Dysphagia and partial paralysis - | 201 |
| Cephalæmatoma, complicated with pa- rietal fracture - - - - | 304 | Ear, middle and internal, diseases of - | 364 |
| Cerebro-spinal fluid, influencing locomo- tion - - - - | 297 | Eclair steam-ship, mortality on board of | 424 |
| Cervix uteri, ulceration of the - - | 414 | Endosmosis and exosmosis - - - | 351 |
| —, perforation of, by the foot of the child - - - - | 419 | Enterorrhœa with membranous formations | 89 |
| Chadwick, Mr., on interments in towns | 135 | Enterotomy, lumbar, in imperforation of the rectum - - - - | 58 |
| Chemistry, Fownes's Elementary, - | 356 | Epidemic fever of Scotland - - - | 344 |
| — animal - - - - | 426 | —, children's, in Dublin - - - | 352 |
| —, proper method of studying - | 173 | Epilepsy, pathology and treatment of - | 340 |
| —, of Man, Simon on - - - - | 426 | Epileptical mania - - - - | 403 |
| China, sketches of - - - - | 171 | Ergot in purpura - - - - | 375 |
| —, public hot-water baths in - - | 172 | Esquirol on insanity - - - - | 278 |
| Christison on poisons - - - - | 62 | —, his opinion of the use of alco- holic drinks - - - - | 281 |
| Cinchona, effects of - - - - | 26 | Ethnology - - - - | 354 |
| Cleft palate - - - - | 90 | Eustachian tube, catheterism of, - | 391 |
| Cleveland, marine hospital at - - | 249 | Extravasation - - - - | 43 |
| Clinical medicine - - - - | 352 | Exudation - - - - | 45 |
| Clinics, medical, in New Orleans Charity Hospital - - - - | 59 | — corpuscles constituting suppu- ration - - - - | 84 |
| Club-foot, operations for - - - - | 149 | — filaments and corpuscles - - | 79 |
| Coin, removal of, from larynx, by invert- ing the body - - - - | 243 | — granules, masses and cells - | 82 |
| Colombat and Meigs, on diseases of females | 106 | — permanent tissues - - - - | 85 |
| Congestion, phenomena of - - - - | 40 | Eye, influence of the muscles of, on vision - - - - | 362 |
| Conium maculatum in insanity - - | 124 | Eyeball, successful extirpation of - | 202 |
| Convulsions, puerperal, from irritation of the bladder - - - - | 273 | Fat, formation of - - - - | 297 |
| Cooper on the testis, and thymus gland | 33 | —, influence of diet in the formation of | 57 |
| — anatomy and diseases of the breast | 320 | Febrile and <i>post mortem</i> calorificity, Dow- ler on - - - - | 282, 289, 347 |
| Copland, Dictionary of Practical Medi- cine by - - - - | 424 | Fecula, action of saliva on - - - | 296 |
| Corpuscles of the blood - - - - | 6 | Femalæ, diseases and special hygiene of, by Colombat and Meigs - - - | 106 |
| —, plastic - - - - | 81 | Fermentation and nature of yeast - | 159 |
| Counterblast - - - - | 314 | Femur, excision of the upper part of - | 305 |
| Cranial vertebæ - - - - | 351 | Fever, typhous, and its complications, treat- ment of, - - - - | 130 |
| Cretinism - - - - | 355 | —, epidemic of Scotland - - - | 344 |
| Crime in Pennsylvania - - - - | 319 | —, puerperal - - - - | 238 |
| Cyanosis, Stillé on - - - - | 225 | —, typhoid - - - - | 346 |
| —, Dr. C. D. Meigs on - - - - | 296 | Fistula lachrymalis, new treatment of - | 297 |
| Datura stramonium in insanity - - | 123 | — in ano, treatment of - - - | 161 |
| Delirium tremens - - - - | 341 | — vesico-intestinal - - - - | 167 |
| —, Williams's lectures on - - - | 407 | —, vesico-vaginal - - - - | 127 |
| Delivery, premature artificial - - | 420 | Forensic medicine, Guy's principles of - | 251 |
| <i>De lunatico inquirendo</i> - - - - | 298 | Fownes, Elementary Chemistry by - | 356 |
| Dictionary of Practical Medicine - | 424 | Fractures, treatment of - - - - | 152 |
| Diet, influence of, on the formation of fat | 57 | —, slow of union, treated by im- movable apparatus - - - - | 17 |
| Digestion of saccharine and amylaceous matters - - - - | 272 | Fracture, compound of the leg with he- morrhagic diathesis - - - - | 228 |
| — physiology of - - - - | 136 | Fungus hæmatodes - - - - | 305 |
| Digitaline, operation and therapeutical ef- fects of - - - - | 404 | Graham, Dr. R., death of - - - | 396 |
| Digitalis, action of, on the heart - | 164 | Galvanism in uterine hemorrhage - | 128 |
| Dispensatory, Wood & Bache's - - | 356 | Galen, lost books of anatomy of, reco- vered - - - - | 62 |
| Dixon on diseases of the sexual organs | 357 | —, select works of - - - - | 422 |
| Doctors and tutors in times gone by - | 314 | Gangrene, abstinent plan of treatment in | 367 |
| Dowler on febrile calorificity - 282, 289, | 377 | | |
| Duodenum, chronic ulceration and per- foration of - - - - | 300 | | |

INDEX.

V

| | | | |
|---|----------------|--|---------------|
| Gases, solidification and liquefaction of | 159 | Insane, schools for the | 94 |
| Gastric fluid, its nature and properties, M. | | —, poor of Philadelphia | 206 |
| Blondlot on | 328 | —, proportion of the | 96 |
| Gout and rheumatism, their pathology and treatment | 342 | —, responsibility of the | 36, 312 |
| Green, Dr. Hennen, on the seat of tubercle in children | 231 | —, treatment of the | 141 |
| Griscom on the sanitary condition of the labouring population of New York | 138 | Insanity, narcotics in | 122 |
| Gross on carbonate of lead in burns | 241 | —, curious case of | 402 |
| — Pathological Anatomy by | 385 | —, Esquirol on | 278 |
| Gun-shot wound of the face | 421 | —, occupation in | 288 |
| Guy, Principles of Forensic Medicine, by | 251 | —, phrenology illustrating | 232 |
| | | —, symptomatology of | 318 |
| | | Interments, appropriate places for | 135 |
| | | Iodide of potassium, in syphilis | 157 |
| | | —, in tubercular thickening of the lip | 169 |
| Hallucination, Briere de Boismont on | 251 | Iodine and its preparations, Barbour on the use of | 220 |
| Harris, Dr. Chapin, on dental surgery | 180 | — in neuralgia | 362 |
| Harrison, Dr., Materia Medica and Therapeutics, by | 31, 392 | Ipecacuanha, as an emetic, in exhaustion and sinking | 274 |
| Heart, congenital malformation of | 276 | —, in uterine hemorrhage | 274 |
| —, musical bellows murmur in | 331 | | |
| Hemorrhage, intra-uterine, fatal case of | 20 | | |
| —, fatal from the stomach and intestines | 303 | | |
| —, uterine, galvanism in | 128 | | |
| —, protracted, case of | 161 | Jackson, Dr. Samuel, Report on Theory and Practice of Medicine, by | 397 |
| —, ipecacuanha, as an emetic in | 274 | Johnson, Dr. James, death of | 422 |
| Hemorrhoids, treatment of | 156 | Journals | 205, 244, 253 |
| Hepatic abscess | 60 | | |
| Hernia, strangulated, reduced <i>en masse</i> | 306 | | |
| Hip-joint, amputation at | 275 | Lactation | 320 |
| Hippocrates and Galen, select works of | 422 | Lead, carbonate of, acute poisoning with | 55 |
| Hoblyn's Medical Dictionary | 395 | —, in burns | 241 |
| Home, Dr., obituary notice of | 99 | —, successful use of, in purpura hemorrhagica | 371 |
| Hooping-cough, nature and seat of | 52 | Lee, Dr. R., tribute to | 425 |
| Hope, Rev. Dr., discourse of | 177, 191 | Lens, complete absorption of, after keratonyxis | 261 |
| —, Pathological Anatomy by | 250 | Let us take warning | 386 |
| Horne, Dr., Medical Topography of Brazil and Uruguay, by | 63 | Library, our | 360 |
| Horse story | 170 | Lick hospital of Edinburgh, statistics of | 333 |
| Houston on the modern improvements in surgery | 146 | Lip, tubercular thickening of, treated with iodide of potassium | 169 |
| Hydrocele, new treatment of | 160 | Liquor sanguinis | 9 |
| Hydrocyanic acid, poisoning with | 192, 193 | Lithotomy | 155 |
| Hydrothorax, acute, operation in | 152 | Lithotripsy, modes of performing | 155 |
| Hygiene, public — Duration of life | 399 | Liver, inflammation of | 163 |
| Hyoscinum in insanity | 124 | London Medical Schools | 385 |
| | | Lunatic asylums, reports of | 141, 205 |
| | | Lunatics, pauper, in England and Wales | 314 |
| Idiots, measurements of brains of | 30 | | |
| — and insane, schools for | 94 | Malaria, argument to prove existence of | 14 |
| Immovable apparatus in fractures slow of union | 17 | Mammary gland, comparative anatomy of | 322 |
| Indian hemp, physiological and therapeutic effects of | 58 | Manslaughter, medical | 189 |
| Inflammation, as a process of abnormal nutrition | 1, 37, 77, 113 | Martineau, Miss, case of | 21, 96, 170 |
| —, changes during | 146 | Massachusetts General Hospital, contributions to | 170 |
| —, circumstances influencing | 117 | Materia Medica and Therapeutics, Harrison on | 33, 392 |
| —, early phenomena of | 37 | Medical classes and graduates | 134 |
| —, essential phenomenon of | 43 | — colleges | 314 |
| Inflammation, in, excess of fibrin in blood | 10 | — ethics | |
| —, termination of | 47 | | |

| | | | |
|--|-----|--|--------------------|
| Medical ethics and example | 174 | Ovaria, diseased, removal of | 154 |
| — Examiner | 63 | —, diseases of the | 337 |
| — students and medical graduates | 245 | Palate, artificial, apparatus for curing | 207 |
| — Jurisprudence, Taylor's | 34 | —, cleft, Ferguson on | 90 |
| — men, schools for sons of | 97 | —, fissure of the | 307 |
| — Society, New York State, Trans- | | Palato-raphé, | 150 |
| — actions of | 216 | Pancreas, functions of the | 237, 273 |
| — studies, causes of moral dangers | | Paulus Aegineta | 62 |
| — from | 217 | Pennsylvania Hospital, fiscal returns of, | |
| Medicinal substances, passage of through | | — for 1844-5 | 245 |
| — the human economy | 56 | Penitentiary, Eastern, of Pennsylvania, | |
| Meigs, Dr. C. D., visit of, to Europe | 313 | — sixteenth report of | 315 |
| Meningitis encephalica | 227 | Pericarditis, causes and frequency of | 294 |
| Menorrhagia | 336 | Peritonitis, with perforation of the ap- | |
| Menses, blood of the | 429 | — pendix vermiformis | 228 |
| Menstruation, vicarious | 336 | Philadelphia, weather and diseases of | 253 |
| Mental cultivation and excitement, Brig- | | — medical schools of | 421 |
| — ham on | 108 | Phrenology, illustrating insanity | 232 |
| Mesmerism, Miss Martineau on | 21 | Phthisis, naphtha in | 261 |
| —, clairvoyance | 389 | —, alleged protecting power of | |
| —, Dr. Forbes on | 186 | — tobacco against | 266 |
| —, of the Sanatorium | 23 | Physician, relation of the, to colleague | 173 |
| Midwifery, Campbell's statistics of | 308 | Physic, Principles and Practice of, by Dr. | |
| Milk, analysis of, from a he-goat | 127 | — Watson | 358 |
| —, in human subject | 320 | Physiology, not unfriendly to religion | 191 |
| —, means of ascertaining its abundance | | Poisoning, acute case of, with carbonate | |
| — before accouchement | 163 | — of lead | 55 |
| Monomania, sometimes epidemic | 279 | —, with arsenic | 166 |
| Moore, Dr. John Wilson, report on me- | | —, with hydrocyanic acid | 192, 193, 267 |
| — teorology and epidemics | 253 | —, with ergotised bread | 196 |
| Moreau, midwifery by | 169 | Population, mode of estimating | 354 |
| Morphine in insanity | 122 | Potato, festival commemorative of its in- | |
| Mortification | 48 | — troduction | 95 |
| Music for the million | 27 | Pregnancy, blood in | 429 |
| Mother or nurse, food of | 321 | Priapism, continued | 302 |
| | | Prisons, mortality in | 181 |
| | | —, reports of | 209 |
| Nævus, treatment of | 151 | Prison discipline, influence of, on | |
| Naphtha, in phthisis | 261 | — health | 209, 316 |
| Narcotics in insanity | 122 | Prolapsus uteri | 339 |
| Nature, how far shall she govern? | 397 | Prussic acid, poisoning by | 193, 267 |
| Necrology | 422 | Pulmonary arteries, obstructions of | 306 |
| Neill, Dr. Henry, obituary notice of | 422 | Purpura hemorrhagica | 132, 352, 371, 375 |
| —, Dr. John, Outlines of the Arteries, | | Pulse, venous, | 129 |
| — by | 324 | Quack advertisements, refusal to insert | 207 |
| Nerves, Outlines of the, by Dr. John Neill | 425 | Quinia, sulphate of, effects of | 26 |
| Neuralgia, treatment of | 188 | — adulteration of, and means | |
| —, iodine in | 362 | — of detection | 128 |
| New Orleans Medical and Surgical Jour- | | — poisonous effects of | 197 |
| — nal | 391 | Ranking's Half-Yearly Abstract | 360 |
| New York, sanitary condition of the la- | | Recreation | 208 |
| — bouring population of | 138 | Rectum, treatment of stricture of the | 156 |
| New Zealanders, mental character of | 354 | —, imperforate, lumbar enterotomy | |
| Nutrition, cellular theory of | 3 | — for | 58 |
| Nux vomica in insanity | 125 | Recse, Medical Lexicon by | 101 |
| | | Regimen Sanitatis Salernitanum | 424 |
| Olivier d'Angers, obituary notice of | 209 | Resolution, termination of | 113 |
| Opium, detection of in stomach | 58 | Respiratory organs, Williams and Clymer | |
| Organisation, a termination of inflamma- | | — on diseases of | 99 |
| — tion | 78 | Rheumatism, <i>see</i> Gout | |
| Organography, vegetable | 361 | | |
| Otto, Dr. John C., obituary notice of | 246 | | |
| Ova, causes of discharge of | 109 | | |

- Ribes, M. obituary notice of . . . 208
 Richardson, Dr., obituary notice of . . . 387
 Saccharine and amylaceous matter, diges-
 tion of . . . 31
 Saliva, action of, on fecula . . . 296
 Scrofulous affections, Greenhow on the
 use of sea water in . . . 294
 Sea water, use of, in scrofulous affections . . . 294
 Secale cornutum, poisonous effects of . . . 272
 Secretion, laws of . . . 327
 Serum, white or opaque, of the blood . . . 23
 Sewall, Dr., obituary notice of . . . 209
 Sex, proportion of males and females born . . . 309
 Sexual organs, Dixon on diseases of . . . 357
 Sick-room, domestic management of the . . . 360
 Sigaud on the climate and diseases of
 Brazil . . . 67
 Simon, Chemistry of Man by . . . 426
 Skin, diseases of, Worcester on . . . 179
 ———, Cazenave and Schedel on . . . 432
 Sleepy disease . . . 391
 Small pox, complication of with purpura . . . 132
 ———, malignant or hemorrhagic . . . 131
 Smith, Dr. F. G., his translation of Ma-
 nual of Auscultation and Percussion . . . 432
 Soirée, Royal Society . . . 206
 Solitary or separate confinement, effects
 of, on the mind . . . 318
 South western travel . . . 29
 Spencer on animal heat . . . 179
 Spermatie animalcules, spontaneous gene-
 ration, &c., of . . . 198
 Spinal cord, functions of anterior columns
 of . . . 272
 Spleen, hypertrophy of . . . 60
 Straphyloraphy . . . 90, 150
 Sub-cutaneous section . . . 149
 Sugar, transformation of, in food . . . 331
 Surgery, dental, Harris on . . . 180
 ——— in New Orleans . . . 275
 ———, modern improvements in . . . 145
 ——— Miller's principles of . . . 104
 ——— Velpeau's operative . . . 70
 Surgical operations, diminished number of . . . 147
 Suture, new form of . . . 352
 Syphilis, intra-uterine . . . 158
 ———, transmitted from father to child . . . 265
 Syphilitic diseases, better treatment of . . . 156
 Tannin in tooth-ache . . . 131
 Taylor, medical jurisprudence, by . . . 34
 ———, on the frequency and causes of
 pericarditis . . . 294
 Teeth, Fox and Harris on the . . . 252
 Teeth-cutting machine . . . 271
 Testis and thymus gland, Cooper on . . . 33
 Tetanus, recovery from . . . 370
 Thomson, Dr. A. T., domestic manage-
 ment of the sick room, by . . . 359
 Tic douloureux . . . 341
 Tobacco, manipulating influence of, on
 phthisis, rheumatism and ague . . . 266
 ———, effects of . . . 311
 Toothache, tannin in . . . 131
 Tracheotomy . . . 151
 Transformation of exudation . . . 79
 Tubercle, tabular view of . . . 180
 ———, cases of seat of, in children . . . 231
 ———, vascularity of . . . 352
 ———, in different organs . . . 292
 Ulceration . . . 77
 Ulcers, Dr. Mercier's treatment of . . . 204
 University of Pennsylvania . . . 354
 ——— medical com-
 mencement of . . . 169
 ——— of Geissen . . . 172
 ——— of Transylvania, vacancy in . . . 389
 ——— Washington, of Baltimore . . . 389
 Urinary diseases, treatment of . . . 154
 ——— and sexual organs, Guthrie on
 diseases of the . . . 286
 ——— deposits, Bird on . . . 429
 Urine, changes in the . . . 430
 ———, density of the . . . 430
 ———, chemical physiology of . . . 431
 ———, colours . . . 431
 Uterus, rupture of the, and of abdominal
 parietes, case of . . . 92
 ———, diseases of the . . . 338
 ———, extirpation of the . . . 339
 ———, racemiferous hydatids of . . . 309
 ———, case of . . . 308
 Vagina, laceration of the . . . 339
 Vaginitis uterinus . . . 309
 Velpeau, Operative Surgery, by . . . 70
 ———'s, Midwifery . . . 323
 Venous pulse, Solon on . . . 129
 Ventilating houses . . . 73
 ——— churches . . . 74
 Vermifuge, a new . . . 204
 Vertebra, cranial . . . 351
 Vessels, new, formation of . . . 87
 Viscera, apparatus for delineating relative
 position and size of . . . 350
 Warming and ventilating houses, &c. . . 73
 Watson, Lectures on Practice of Physic, by . . . 358
 Weather and diseases of Philadelphia . . . 353
 Williams and Clymer, on diseases of the
 respiratory organs . . . 99
 Witchcraft, medical . . . 363
 Wood and Bache's Dispensatory of the
 United States . . . 356
 Woodward's experience of narcotics in
 insanity . . . 122
 Women, on diseases of, by Ashwell . . . 173, 325
 Worcester on diseases of the skin . . . 179
 Yeast, nature of . . . 159

